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Notes on U. S. Army Medical Service Insignia

By

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(With 7 illustrations)

HISTORY, even while in the making, has a way of eluding us. Time only tends to compound this process. Causes, continuities and meanings, the subtle significance of this person or that event are obscured or eventually lost in the absence of adequate record and artifact keeping. Oddly enough, among the first things of history to be lost are things. Unless these are recovered and preserved, they may be lost forever. Apparently, this has been the case with the earliest of Army Medical Insignia whose origins and use are obscured and lost. Even in the matter of the adoption and use of the current Medical Corps insignia, the caduceus of Mercury, there is considerable obscuration surrounding its selection and the reasons why this symbol, which is the mark of messengers and gamblers, ambassadors and commerce, rather than the caduceus of Aesculapius should have been adopted as the hallmark of the medical profession. With the creation of the U. S. Air Force, its medical service has finally undone this scholastic slight by adopting the caduceus of Aesculapius (Plate I).

It may be that the Army Medical Service will one day make a similar move, at which time the various insignia of the past will be preserved in what Rosen has described[1] as the repository for the collective memories of a social group. But whether or not the present caduceus is replaced, it still remains the function of history to recover, to record, to report, to interpret, and through research to provide the means for possible correction of errors and misunderstandings. It is within this framework, that this report is being rendered.

In an earlier communication,[2] the symbol-

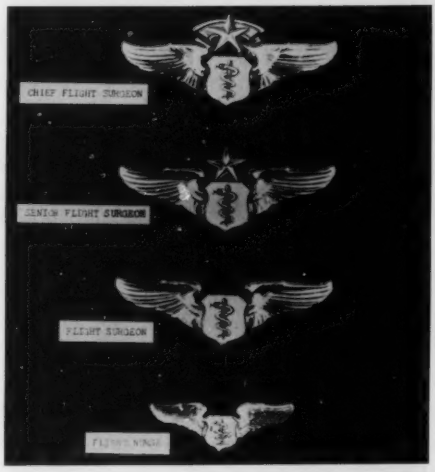

PLATE I. Present-day U.S. Air Force Flight Surgeons' and Nurses' Insignia.

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PLATE II. Coat-of-Arms, U. S. Army Medical Department, 1818.

ism of various armed forces medical insignia throughout the world was discussed. The present report, however, is limited to a brief documentation of U. S. Army Medical Service Insignia.

At the outbreak of the Revolution, Hume[3] estimated that there were only 200 physicians possessing M.D. degrees in our thirteen colonies. Yet he believed that the number of practitioners of medicine exceeded 3,000. Approximately 40 per cent of these practitioners served chiefly as line officers and troop commanders in the Continental Army and Navy during the eight year period which we identify as the War for Independence. They were appointed by the Continental Congress. Medical officers of the militia were usually appointed by the commanding officer of the militia regiment.

The Continental Army had no medical service as such. Physicians in the Army thus had neither distinctive uniform nor insignia.

During the War of 1812, Congress authorized the establishment of the Army's General Staff which made provision for a Physician and Surgeon General, and Apothecary General. Seeds for the ultimate structure and design of the Army Medical Department thus were laid down with these key appointments. Shortly thereafter (1818) the Medical Department of the Army adopted a coat-of-arms (Plate II). But distinctive Medical Service uniforms and insignia had yet to be designed. The coat-of-arms has been described[4] by one of the Army's distinguished medical librarians, Colonel P. M. Ashburn, as follows: "Arms. —Per pale: dexter an escutcheon paly, of seven gules and six argent: chief dexter azure charged with mullets, five fess ways and four paleways, argent: sinister argent charged with a serpent entwined on a staff paleways, all proper.

"Crest.—A cock walking, gardant sinister, proper.

"Motto.—Experientia et progressus."

From the Revolutionary War until 1860 the Medical Department of the Army was referred to variously in the Acts of Congress as "Hospital," "Hospital and Medical Establishment," "Medical Staff," and finally "The Medical Department." The phrase "Medical Corps," was first used in an Act of Congress dated June 21, 1860. In another Act of August 3, 1861, the Corps became "Medical Staff" again. In an Act of April 16, 1862, a title refers to "Medical Department," but the body of the Act refers to the "Medical Corps." From 1862 until 1901 "Corps" and "Department" appeared to be used interchangeably and indifferently.

At a date difficult to pin-point but probably prior to the Mexican War, the first distinctive uniform insignia was devised for the Medical Service (Plate III). This insignia consisted of the initials "M.S.," denoting Medical Staff, which were embroidered in silver, surrounded by a gold wreath and worn on the epaulets. It continued to be worn by Medical Officers of the Army until 1872 when the initials were changed from "M.S." to "M.D." (Plate IV). The "M.D." insignia continued in use until 1890. From 1890 to 1896 Medical Officers wore the same insignia as certain other staff officers.

By 1887 the framework of the modern Army Medical Service was established with the passage of the law authorizing the Hos-

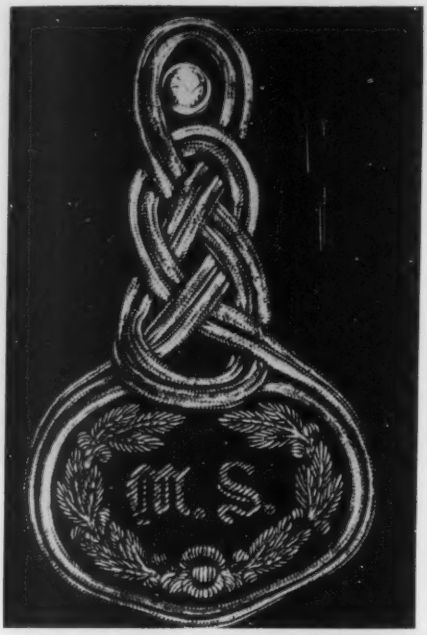

PLATE III. Medical Service Epaulet, circa 1840-1872.

pital Corps. A few years earlier (1881) Army Hospital Stewards, like their Navy* counterparts, had adopted the caduceus of Mercury as collar and cap ornaments. With the establishment of the Hospital Corps, however, other changes and innovations took place. Green trimmings, the color for medical doctorate academic robe trimmings in the United States, were adopted for the uniform, and a red or Geneva Cross on a white arm band became standard accoutrement of medical personnel.

For a time, from 1890 to 1896, Medical Corps officers once again were without distinctive medical insignia. Instead, on their collars they wore a shield which was common to certain other staff officers.

In the period immediately preceding and following the Spanish American War (1896-1902, medical officers' insignia consisted of two kinds of crosses, the Geneva and Maltese Crosses. Again the Army was to follow an earlier Navy precedent (1883) when a small Geneva Cross of maroon velvet inside a silver Maltese Cross was employed to designate the medical corps. The Army insignia (Plate V) consisted of a modified Maltese Cross in silver worn on the collar with a "U.S.," the cross surrounded by a laurel wreath whose symbolism was described in the author's earlier communication[5] and worn as a cap crest and Geneva Cross chinstrap buttons worn on the pith helmet. The Medical Corps Insignia for dress uniforms were worn on the epaulets. The basic insignia consisted of a Maltese Cross embroidered in silver on a black cloth background and surrounded by a rim of gold braid. The one included herewith (Plate VI) is that of the grade of Lieutenant Colonel of the Connecticut Militia. The Maltese Cross, described in detail by Hume,[6] is one of the earliest of military medical insignia.

By the Congressional Act of February 2, 1901, the structure of the Medical Department took on a modern cast in terms of "one

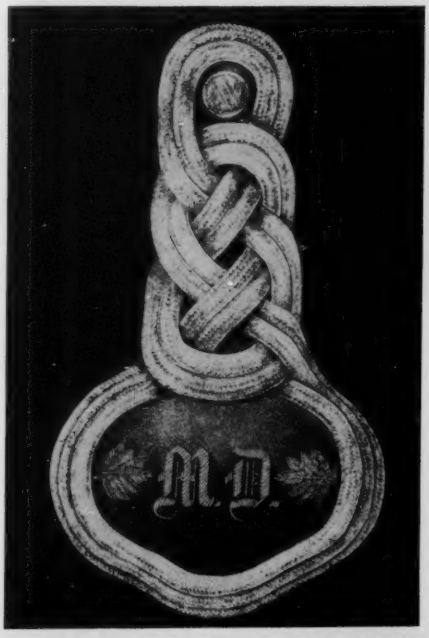

PLATE IV. Medical Department Epaulet, 1872-1890

* To this day, moreover, Navy medical personnel, other than medical and dental corps officers, continue to employ the caduceus of Mercury as their insignia.

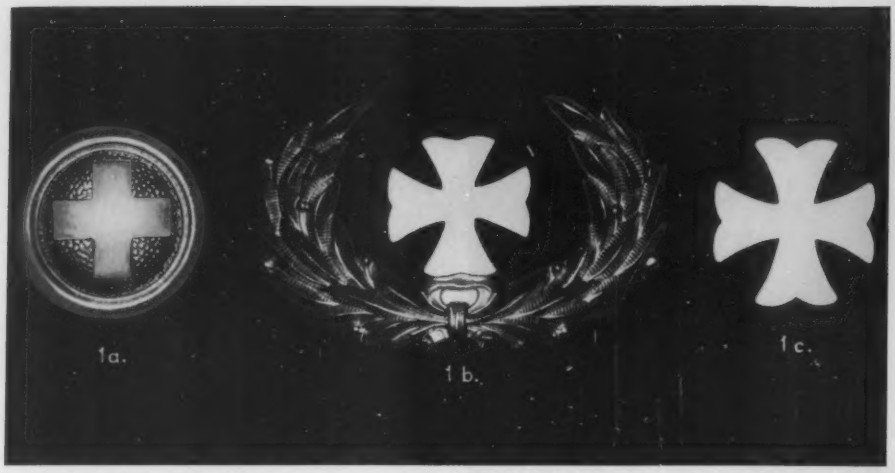

PLATE V. U. S. Army Medical Corps Insignia, 1896-1902, depicting Geneva and Maltese Crosses.
1a. Pith helmet chin-strap button.
1b. Visored cap crest.
1c. Collar insignia.

Surgeon General . . . eight Assistant Surgeons-General . . . twelve Deputy Surgeons-General . . . sixty Surgeons . . . 240 Assistant Surgeons . . . the Hospital Corps . . . and the Nurses Corps." A year later the caduceus of Mercury was adopted as the official Medical Department insignia.

PLATE VI. Medical Corps Epaulet, 1896-1902. This particular epaulet is of the Federalized Connecticut militia, circa Spanish-American War.

The adoption of the caduceus of Mercury ushered in the contemporary period in the Army Medical Service, a period which has been marked by the development and growth of numerous specialties. By Congressional Act of April 23, 1908, the Medical Department was restructured in terms of a Medical Corps and a Medical Reserve Corps, a Hospital Corps, a Nurses Corps,* and Dental Surgeons. With this Act a clear distinction was made between the Medical Department and the Medical Corps, which formally dates as a Corps to April 23, 1908. In 1911 the Dental Corps as a separate corps was established. Five years later the Veterinary Corps came into existence.

A succession of specialty corps were developed to meet the needs of a citizen augmented Army during the two world wars. The Sanitary Corps, for example, was established by Public Law 12, May 18, 1917. Between the wars this Corps was a reserve

*This Corps formally dates from February 2, 1901.

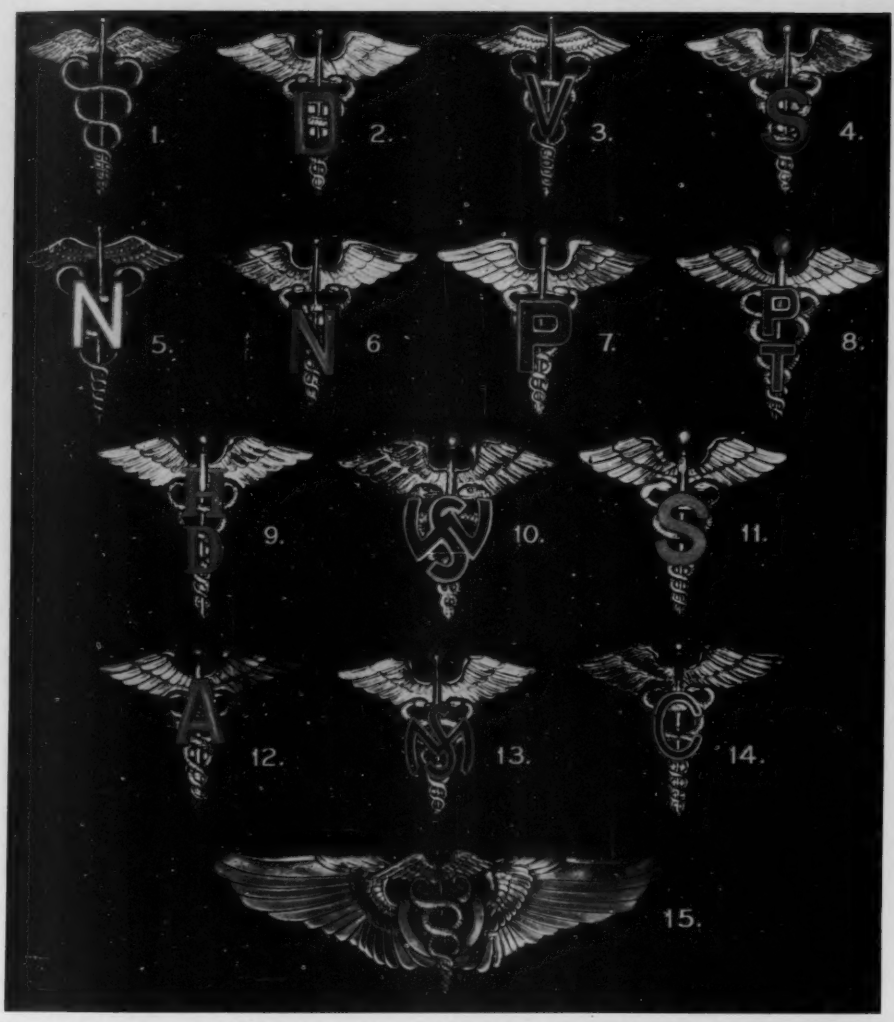

PLATE VII. U. S. Army Medical Insignia, 1902—1. Medical Corps. 2. Dental Corps. 3. Veterinary Corps. 4. Sanitary Corps. 5. Nurse Corps "WWI" (N is white). 6. Nurse Corps (N is black). 7. Pharmacy Corps (P is brown). 8. Physical Therapy (PT-brown). 9. Hospital Dietitian. 10. Women's Medical Specialist Corps. 11. Army Medical Specialist Corps (S is brown). 12. Medical Administrative Corps. 13. Medical Service Corps. 14. Contract Surgeon. 15. Army Air Force Flight Surgeon.

component only. In a considerably augmented status its officers served throughout World War II. By Public Law 337, dated August 4, 1947, it lost its identity as a Corps and was absorbed into the Medical Service Corps which came into existence under the same public law terminating the Sanitary Corps.

The Medical Administrative Corps established under Public Law 242, June 4, 1920, was terminated as a Corps under Public Law 337 previously cited, and its personnel integrated into the Medical Service Corps which came into existence under the same law.

The Pharmacy Corps was a short-lived

service having been established under Public Law 130, July 12, 1943, and also terminated under Public Law 337. Many of its personnel also were integrated into the Medical Service Corps.

During World War II physical therapists and hospital dietitians who had corps-like insignia (see Plate VII) in fact were not members of independent corps. With the establishment of the Women's Medical Specialist Corps under Public Law 36, dated April 16, 1947, personnel in these two services were integrated into the Regular Establishment as part of the WMSC. In 1955 Public Law 294 was enacted making it possible for these all-women components to accept men into their organization, thus necessitating the change of name of the WMSC to Army Medical Specialist Corps.

Finally we must note the employment of contract surgeons by the Army, authorized by Act of February 2, 1901. These personnel utilized from time to time in a quasi-military status served a further important function in view of the fact that they could be assigned individually to posts and stations where no other military personnel were available. In 1950 the Surgeon General agreed, to the exclusion of authority, for the employment of Contract Surgeons from the Army Organization Act.

This brief statement concerning the Army Medical Services and their insignia, is outlined for the sake of the record and record-keeping.

ACKNOWLEDGMENT

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"The health and vigor of our young citizens guarantee the future life and spirit of the Republic. We must, therefore, continue to emphasize the full preparation of our youth in every way—physical, emotional, mental, social and spiritual—so that they may be equal to the great responsibilities they will inherit."

PRESIDENT EISENHOWER

Some Biological Factors Involved in Arctic Warfare

By
CHARLES G. WILBER, PH.D.†

INTRODUCTION

IT IS quite apparent that a potential World War III will involve the Arctic as a strategic area of first importance. One of the chief factors limiting the development of arctic military power is man. Military personnel will require highly specialized clothing, housing, feeding, and training in order to function effectively. Psychologically certain men are unsuited for service in arctic regions. It is therefore essential that adequate psychological selection of personnel for northern duty be in operation.

It is not commonly realized that the soils, flora, fauna, and ecological relations (biological factors) of a region may exert a profound influence on the methods of pursuing warfare in that region. Experience in the past on the part of military commanders and civilian explorers indicates clearly that biological factors play a prominent role in determining the outcome of arctic operations. It is my purpose here to described certain biological factors which will influence military operations in the north and to summarize the available information which will aid in solving the problems presented.

TERMS USED

The Arctic Circle is drawn on maps and globes at 66° 30 minutes north. Since it is an arbitrary line, it has no value in delimiting the area termed Arctic in this report. Some geographers maintain that the northernmost tree limit marks the boundary of true arctic regions. In general this is a useful and convenient boundary; it includes Greenland, Spitsbergen, and numerous other polar islands, as well as the northern regions of continental Alaska, Canada, and Siberia. The northern end of Iceland and the shores of Labrador would be included. One writer on the subject delimits the Arctic similarly:

"The far north is divided into the Arctic and Subarctic on the basis of climatic differences (not by the Arctic Circle). The Arctic is the region in which the average temperature for the warmest month is less than 50°F. This roughly coincides with the tree line on the northern limit of forest. It includes the northern coasts of Alaska, Canada, the Canadian arctic archipelago, most of Labrador, most of Greenland, the Svalbard archipelago, northern Siberia, and the Arctic Ocean."

On the other hand, Webster's Geographical Dictionary defines the arctic regions as follows: "The Arctic Ocean and the lands in it and adjacent to it about to lat. 70° N; including Point Barrow in Alaska, most of Franklin district in Canada, two-thirds of Greenland, Svalbard, Franz Josef Land, Novaya Zemlya, N. Siberia."

Essentially the above definitions are the same. For practical purposes the minute differences are of no real concern.

In discussing arctic warfare, any one of the following points of view may be taken: (1) mapping and description, (2) meteorology and climatology, (3) oceanography, (4) geology, (5) general physical problems, (6) biology, (7) anthropology, (8) ethnology and archeology, (9) soils and agriculture. The present report is concerned primarily with item 6, although some overlap into items 3 (marine biology), 7 (racial physiology), and 9 (flora) is to be expected. An exhaustive discussion of biological factors should include plant life, animal life in water and on land, parasitism, prevalent diseases, dominant blood groups.

THE BIOTIC PROVINCES OF ARCTIC NORTH AMERICA

According to one authoritative definition, "A biotic province may best be conceived of

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as a considerable geographical area over which the environmental complex produced by climate, topography and soil is sufficiently uniform to permit the development of characteristic types of ecologic association."

Since there are slow changes of climate of greater or lesser permanence in all regions, the area of a given biotic province also is modified in extent. Moreover, the provinces themselves are changing internally (new associations of animals and plants and the like). Consequently, the boundaries of a province are in a state of flux in regard to position.

One of the most useful and satisfactory criteria for distinguishing one biotic province from another is the vegetation. This is not a completely satisfactory criterion, but it is better than most. Arctic and subarctic North America can be divided into four biotic provinces: (1) Eskimoan, (2) Hudsonian, (3) Sitkan, (4) Aleutian.

1. *The Eskimoan* comprises all the northern treeless parts of the new world with the exception of the Aleutian Islands and certain parts of the Alaska Peninsula. This area coincides closely with that which was defined previously as truly arctic. The climate is severe: long, cold winters and cool summers; moderate to very slight precipitation obtains; the soil only a few inches beneath the surface is permanently frozen (the permafrost). Low-growing vegetation is found chiefly. It consists of lichens, mosses, horsetails, sedges, grasses, other herbs, and dwarf shrubs. In some sheltered valleys, stunted trees are found.

The majority of birds in this province are migratory; however, a few birds are permanent residents: snowy owl and gyrfalcon. These forms are nearly pure white the year round. The ptarmigan, a characteristic arctic bird, is white in winter and brownish in summer. A few characteristic mammals of this province are the polar bear, arctic hare, arctic fox. These remain white the year round. On the other hand, the weasel and the collared lemming change color with the seasons.

2. *The Hudsonian* is a wide region of spruce forest just south of the Eskimoan. Ecologists refer to the characteristic vegetation of the area as *taiga*. This forest area stretches from Newfoundland to western Alaska. It does not cross the Rocky Mountains. A large part of the province has a low elevation and contains numerous rolling, glaciated hills. Low mountains are found in the Quebec region of this province; high ones in British Columbia, Yukon, and Alaska. Long, extremely cold winters and short, moderately warm summers characterize the Hudsonian province. In the western parts of the province, precipitation is light; in the eastern, heavier.

Spruces are without question the characteristic trees of this province. The following species are found: *Picea mariana,* the black spruce, often stunted, grows in muskegs on higher ground, most abundant species. *Picea glauca,* the white spruce, found in well-drained locations, also along river banks, may reach a trunk diameter of more than 24 inches. Other common trees of the Hudsonian are the white birch, the tamarack, balsam poplar, aspen, alder, willows, jack pine, and balsam pine. Sphagnum moss forms a thick carpet over most of the province. It even extends up the mountainsides above the tree line.

A number of the mammals (but not the majority of them) of this region hibernate or take prolonged naps during the severe winter. Among these are the black bear, grizzly bear, ground squirrel, marmots, chipmunks, jumping mouse. This province is not strictly part of arctic North America but would be included in the subarctic regions of the continent.

3. *The Sitkan* province consists of coniferous forest along the coast from around Kodiak Island to the southern Alaskan border. It is a very mountainous region and has many large glaciers. Precipitation is heavy; snowfall, very heavy. Year-round temperatures are even and cool. Vegetation is extremely dense. The following trees are found quite commonly in the thick Sitkan forests: Alaska cedar, western hemlock, mountain

hemlock, Sitka spruce, willows, and black cottonwoods. Many animals in this province are very dark brown in color.

4. *The Aleutian* province consists of the following regions: Aleutian Islands, treeless part of the Alaskan Peninsula, and the Pribilof Islands. It is generally mountainous. The winters are mild and the summers cool. Much fog, rain, and snow are characteristic. There are no trees in the province, but dwarf willows are found. Grasses, flowering plants, and ferns are common at low elevations. Numerous sea birds, seals, sea otters, and sea lions are characteristic animals.

Biogeographical Regions of Arctic Russia

In general, there is limited information available concerning anything about Soviet territories. Despite this fact, it is possible to divide the Russian Arctic into detailed biotic provinces as was done for the new world. It is fairly clear that practically all arctic Russia resembles to a marked degree the arctic regions of North America. As in North America, the following animals are common in arctic Russia: hares, picas, beavers, marmots, ground squirrels, voles, lemmings, martens, weasels, wolverines, brown bears, wolves, foxes, moose (called elk in Europe), reindeer, wapiti, bison, mountain sheep, and musk ox. The extreme northern coastal strip of the Soviet Arctic is in a region which is practically identical with the new world Eskimoan biotic province.

The vegetation of the northern coast of the Russian Arctic is typically *tundra* which extends down the Bering Sea coast to near the tip of Kamchatka. South of the tundra is a tremendous area of coniferous forest which is called the *taiga*. In the eastern Soviet Arctic there are numerous mountain ranges running in a north-south direction which serve as natural barriers to any land invasion from the Bering Sea. The climate of the northeastern interior of Soviet Arctic is very severe. Along the coast the climate is probably much like that found in similar areas of North America. In the northeast interior of Soviet Arctic annual temperature ranges of −70 to +90°F are the rule. The average annual temperature in a large part of this territory is only 10°F. The cold pole of the world is Verkhoyansk, Siberia, where temperatures of −94°F have been recorded.

Tundra and Taiga

Tundra is a Siberian term. It refers to the area north of the tree line. In Canada, "barren grounds" is the comparable term used. The accepted biological term is tundra. Taiga is the Siberian term for the coniferous forest belt south of the tundra. "Most conspicuous of the large animals of this biome is the moose, the range of which in Europe, Asia, and North America coincides closely with that of the taiga vegetation."

Vegetation and Soils

The arctic areas are covered chiefly with tundra or grassland. Most of this discussion will deal with the vegetation and soils of Alaska. However, similar conditions in all probability obtain in comparable areas in Siberia.

Grassland is found over the following areas: (a) Alaskan Peninsula, (b) Aleutian Islands, (c) south slopes of Alaskan range. Tundra is found in a large section bordering the Bering Sea and the Arctic Ocean. Tundra is produced as a result of the peculiar climate. There are three types of tundra known: (a) *Wet tundra:* most extensive; covers flat, gently rolling plains near Bering Sea and Arctic Ocean, interspersed with dry tundra on the better-drained slopes. (b) *Dry tundra*: covers strongly rolling areas in regions of very low temperature. (c) *Ridge tundra*: found near mountaintops and covering rocky ridges.

"The grassland supports a dense cover of grasses and weeds with a minor admixture of vines and shrubs. The average composition of the tundra cover is about 30 percent lichens, 25 percent sedges, 25 percent low shrubs, and 20 percent grasses, weeds and mosses. The dry tundra has a larger proportion of large shrubs, grasses, and weeds,

while the ridge tundra has more of the lichens."

In subarctic regions, a type of marsh called "muskeg" is found covering large areas. "The material consists of brown or coffee-brown fibrous peat more or less decomposed. Sphagnum moss makes up a large part of the peatmoss. The peat is saturated with water at all times." From an agricultural point of view, muskeg is useless. Because it is so soft when unfrozen, it is effective in impeding land transportation during the summer. Consequently, it is a factor to be given serious consideration in northern military operations.

Underlying much of the tundra is the *permafrost*, a region of permanently frozen subsoil. Improper construction of runways or housing results in the melting of the permafrost and the shifting of overlying structures.

Animals

The annual life of the arctic regions is rich in numbers but not in variety of species. The mammalian population is composed chiefly of the following species: the caribou (new world), the reindeer (old world), the polar bear, arctic wolf, arctic fox, arctic hare, and musk ox. Numerous small mammals, such as the ground squirrel, lemming, ermine, field mice of various sorts, and shrews, are plentiful.

All these animals are edible and could be used as a source of food in emergencies. They do not occur in sufficient numbers at the present time to serve as a steady meat supply for even small detachments. As will be pointed out later, the flesh of these animals is a possible avenue of infection for troops; however, under proper conditions the use of such meat has an important place in any program of survival or escape in the Arctic. There is not much point in this paper of discussing strictly marine mammals of the Arctic (walrus, seal, white whale), since their effect on arctic military operations probably is most indirect. However, it should be noted that they have been the principal source of food for the reindeer people of the north and for various explorers of that region.

The most characteristic bird of the Arctic is the ptarmigan. In the winter, its plumage is snowy white; in the summer, grayish brown. It is edible and quite easy to take since it does not become readily frightened. The snowy owl is also a typical arctic bird. It is edible but quite distrustful of man, and hence is most difficult to catch.

By far the most abundant insect group in the Arctic during the summer months is made up of mosquitoes. Certainly no tropical area is more plagued with these small pests than is the Arctic. Although the number of individuals is astonishingly great, there are only a relatively few species. Dyar worked up the mosquitoes collected by the Canadian Arctic Expedition and found but two species in 134 specimens. From a similar number in the tropics one might find thirty or forty species. Other insects, such as bumblebees, are found even on the islands north of Canada. Sandflies and small gnats occur abundantly and are a definite nuisance during calm weather.

Trichinosis

Trichinosis in the Arctic is a health problem to some extent. The almost universal infestation of arctic animals with this parasitic disease is a fact that has been unrecognized until quite recently. Inexperienced persons are in real danger from potential infection with this disease.

Trichinosis is a severe and often fatal worm infestation of man. Human infection results from the eating of inadequately cooked meat which contains living forms of *Trichinella spiralis*. The male worm is about $\frac{1}{18}$ inch long; the female, about $\frac{1}{8}$ inch. In the adult stage (sexual) the worms live in the intestine of various animals. Infected meat which reaches the human stomach is digested, and the encysted worms escape. They develop sex organs and copulate. The males are soon passed out with the feces, but the viviparous females remain to produce thousands of offspring.

The adult females bore through the in-

testinal wall and reach the circulatory system, where they deposit their young (1000 or more at a time). The young are carried in the bloodstream to various parts of the body. Finally, the worms arrive at some voluntary muscle (limbs, back, diaphragm, tongue, and so forth), and each worm bores into a muscle fiber and coils up in the substance of the muscle to form a spindle-shaped cyst. During the encystment process, the victim experiences a variety of unpleasant symptoms, which may include fever, muscular and joint pains, rheumatic-like attacks. After a time, calcium salts are deposited around the cysts and the victim recovers. The various symptoms are severely incapacitating. If the victim does not die, he is invalided for months. Quite commonly the convalescence extends as long as a year and a half.

The following arctic animals are known to be infected with trichinosis (the incidence of infection is not yet certain): reindeer, caribou, moose, rodents of all sorts, polar bear, walrus, brown bear, black bear, seal, whale, fox, dog, and probably wolf.

Human Physiology in the Arctic

"Of all the factors responsible for the normal pattern of biochemical reactions in man, a relatively constant body temperature is one of the most important." It is only through precise regulation of the body temperature that the human machine can function at peak efficiency. The so-called "normal" temperature range (98°-99°F if taken by mouth) is a point of balance between two opposing sets of factors: (a) heat production by the oxidation of foods; (b) heat loss by evaporation, radiation, conduction, convection. For many months in the Arctic the heat loss is greatly increased because of severely low environmental temperatures. Increased heat production and artificial insulation in the form of cold weather clothing can be used to meet this loss.

For most military personnel who are stationed at permanent bases, the temperature stress imposed on the body during the arctic winter is relatively insignificant: such personnel are housed and work in adequately heated quarters and consequently spend most of their time in temperate zone temperatures. However, personnel stationed at outlying posts, at satellite airfields, at radar installations, and those who are engaged in constructing new installations (for example, in recently taken enemy territory) will be exposed to low ambient temperatures for many hours each day for many months each year. What effect does such temperature stress have on the human machine?

Acclimatization

In popular literature, one often reads advice concerning how to harden oneself to the cold. Icy showers in the morning, brisk exercises in the cold while wearing light clothing, and other uncomfortable procedures are usually advised. The end result desired is the increased capacity of the individual as a whole to withstand cold weather. However, the results of scientific investigation give little justification for such "conditioning" of the body as a whole, although the soul may benefit from such penances.

A study of the blood properties in airmen transferred overnight from Randolph Air Force Base to Ladd Air Force Base in Alaska shows that no significant variations in blood chemistry, in numbers of cells, or in physical properties can be correlated with the changed environment. Moreover, it is known that there are essentially "no changes in the electrocardiograms of healthy men who are transferred from a subtropic to a subarctic environment."

Similarly, men who have lived in the subtropics for months and are then transferred to the Subarctic show no change in basal metabolic rate even after seven months. On the other hand, some Eskimos have basal metabolic rates which are about 20 percent higher than white men tested at the same time. This elevated metabolism is known to be correlated with the high protein intake of the Eskimo when eating his native diet. If Eskimos are fed the usual Army A Ration for a short time, their basal metabolic rates become essentially the same as that of white soldiers. Apparently conditions for soldiers

in the Subarctic are such that environmental stresses do not provoke generalized adaptive reactions; or it may be that such generalized adaptive reactions to cold are lacking in man.

However, it is now quite clear that adaptation of localized areas of the body to the cold does take place under certain conditions. Eskimos can work in very cold environments with their hands uncovered and maintain manual dexterity for periods of time much longer than it is possible for the unadjusted white man. Similarly, it is known that fishermen who spend long periods of time during the winter working with their bare hands exposed soon develop the capacity for maintaining manual dexterity for appreciably long periods of time. In other words, it seems quite clear that significant adjustment to the cold occurs in the human hands. There is some evidence that other areas of the body, such as the face, do become adapted or adjusted so that they are better able to resist the incapacitating effect of cold. Such localized adaptation does reduce the need for clothing under certain conditions and certainly will make an adapted or adjusted individual much more effective in carrying out his job and certainly much more comfortable in doing his work. As a general rule, it is quite evident that the Eskimos are not particularly handicapped by the arctic climate. They have managed for many hundreds of years to establish a culture which is quite adequate for their needs. It would, therefore, seem that properly organized and directed activity can soon make vigorous young men with proper clothing and know-how equal to Eskimos in ability to live and function in the Arctic in a very effective manner.

Ascorbic Acid

If rats are exposed to a cold environment, there is a marked increase in the ascorbic acid (Vitamin C) content of the tissues. Rats can synthesize the vitamin. Guinea pigs, on the other hand, cannot synthesize Vitamin C, and it has been shown that resistance and adaptation of these mammals to cold depend on the amount of ascorbic acid ingested daily. Adapted guinea pigs show heavy concentrations of the vitamin in various tissues. In accord with these results are the observations made on the "Musk Ox" maneuvers, which showed that there is less ascorbic acid in the urine of men when the environment is colder. Other investigations also show that a diet containing too small amounts of water-soluble vitamins impairs muscular endurance of men, especially during cold exposure.

Therefore, the conclusion of the Canadian research worker Therien that Vitamin C in sufficient amounts protects the living organism against the deleterious effects of cold seems warranted. Moreover, it would seem desirable that application of these results be made immediately to military personnel stationed in the north.

Diet

There has always been a popular belief that resistance to cold weather requires a high fat diet. Recent controlled experiments apparently confirm this belief. If rats are offered an assortment of foodstuffs and are then exposed to low temperature (0°C to —2°C), they usually select a diet which permits them to survive in good condition. The composition of the selected diet is most interesting. About one-fourth of the food was fat; another one-fourth, casein (protein). Animals that failed to increase fat and protein intake died in the cold environment. Without question the results indicate that, "A diet rich in fats is decidedly superior to one rich in carbohydrates (both diets being equi-caloric and equi-vitaminic, the amount of food ingested by each rat daily being taken into account) for adaptation and resistance to cold."

General

A variety of laboratory experiments has been performed to ascertain any possible bodily changes which might follow exposure of men to cold environments. If rats are kept at 4°C for 10 days, they increase markedly their food intake and their production of

urine. Sodium is conserved by the body under these conditions. Men who are suddenly transferred from a subtropical to a subarctic area do not show any changes in the brain wave pattern. The great volume of work dealing with psychological adjustment to the Arctic cannot be dealt with here. The present state of our knowledge in this field suggests that such adjustment is not greatly different from that to any other isolated, primitive environment.

Discussion and Recommendations

Arctic Survival. In the tradition of Stefansson's *The Friendly Arctic,* the United States Army during World War II taught soldiers that they could "live off the country" if forced down in arctic regions during a mission. Extensive publications dealing with arctic survival were issued, and numerous courses of training in arctic survival methods were given. As a morale factor, such training is warranted: it gives military personnel a feeling of confidence which is so essential to the effective execution of a mission. It might be well, however, to ascertain the premises upon which the idea of "land and live in the Arctic" is based.

Vilhjalmur Stefansson spent some twelve years in the Arctic beginning around the year 1908. During that time, he supported himself for years almost entirely on the resources of the arctic regions. He was an outstanding hunter of big game, and he was well able to travel on snowshoes aided by dog team transport. In his various parties he had men who were well trained in the art of living in the Arctic. Consequently, in evaluating his performance, one must be careful not to assume that military personnel of today could equal Stefansson's record of half a century ago. Moreover, the populations of various big game animals in the Arctic have decreased markedly: Musk oxen have disappeared from most arctic lands. The large herds of caribou, so common 50 years ago, are widely distributed no more. Seal are not so plentiful as they once were. Under the conditions which would obtain during World War III, arctic survival will require in great measure the use of adequate survival kits. The military cannot depend on "living off the country" for survival of its personnel. Caches of food must be established, and a highly organized system of search and rescue is imperative. Training in arctic survival and escape should emphasize the use of well-planned kits. Rendezvous points should be established as widely as possible in the Arctic, and careful briefings of personnel concerning rendezvous procedures should be made.

Parasites. The dangers of infection with trichinosis have been referred to previously. Other dangerous parasites are found in the flesh of arctic animals. Such organisms as echinococcus and various tapeworms need merely be mentioned. With these facts in mind, it is quite obvious that military personnel stationed in the Arctic must be impressed with the dangers of undercooked wild game. Men who are out on short hunting expeditions for rest and relaxation are exposed to such potential infection. Nothing is more appetizing than a rare, sizzling moose steak cooked over an open fire. No infection is more incapacitating than that resulting from various worm parasites. Personnel forced down during flights in the Arctic may run into great difficulties in surviving if inadequately cooked meat is eaten. There are really no effective therapeutic measures for curing many of the parasitic infections. However, prevention is simple and practical: cook *all* meat thoroughly. If there is any pink tinge to the meat, it is undercooked. Frying, broiling, or boiling must be done so that the interiors of the largest pieces are gray and not pink in color.

Conditioning of Troops. Very strong evidence has been published, especially by Canadian workers, indicating that large amounts of ascorbic acid aid the mammalian body in adjusting successfully to cold. So much collateral evidence on this point is available that it does not seem unreasonable to recommend that military personnel in the

Arctic be given adequate amounts of Vitamin C in the diet. In truly arctic climates, a daily intake of approximately 300 to 600 mg. of ascorbic acid for a 180-lb. man is suggested. Actual field use may require changes in the suggested amounts.

One of the chief limiting factors in the satisfactory conditioning of troops for arctic duty is the availability of experienced and capable arctic leaders. Limitations of the number of capable arctic leaders, as well as of proper equipment, make it somewhat not feasible to train large bodies of troops for arctic duty. In the past we have had some military units which were extremely competent in arctic field operations. As an example, the Alaskan Scouts can be cited, as well as the present Territorial (Eskimo) Guard. The Norwegians had some well-trained troops who served most effectively in the field in the Arctic. Their King's Guard was most competent. Some French Chasseurs Alpins battalions were very capable. All these troops were elite and had been severely trained. They were prepared and equipped for company or battalion operations. In addition, Finns and Russians operated in large tactical and strategic arctic operations. By utilizing extensive training they produced strategic commanders competent as leaders. One cannot overemphasize the personal advantage to military personnel of intensive exercises in the Arctic, for they then acquire facility for interesting activities in sports and travel in addition to their normal military duties.

The key difficulty in building a suitable arctic military operational force is guaranteeing adequate leadership. Leadership is extremely difficult to find when rotation and change of duty station prevent the accumulation of suitable experience and disrupt the continuity of arctic duty. At present, there are no persisting organizations which can develop arctic specialists and arctic commands motivated as elite troops. It is well recognized that leadership in space operations or in other technical activities of the military requires well-trained specialists. By the same token, units designed to operate in the arctic climate require specialist leaders if such units are to function effectively.

The human machine has certain limitations beyond which the most drastic military order cannot push it. Much emphasis must be put on training for arctic operation. The proper kind of arctic clothing, the construction of shelters for use in the field, and such operations must become almost mechanical with men who will be assigned for such duty in the cold north. Given practice under competent leadership, almost any type of military personnel suitable for general duty could become effective in war in the Arctic. While admittedly we are trying to avoid war, specially organized elite arctic military units could be very useful in the support and fulfillment or our many extensive technical arctic missions. The participants would have an interesting time in the course of their arctic duties, and they could see career opportunities to stimulate effort and sustain ambition. In time of war they would be immediately available for training of large masses of troops or for operations which would require small troop units. It seems clear that highly motivated individuals serving under competent leadership and with full understanding of the peculiar environment in which they operate can carry out military operations in the Arctic with effectiveness and dispatch. Such thoroughly-trained elite troops seem quite important to our national welfare.

Disaster and Disposal of the Dead

By

COLONEL GOTTLIEB L. ORTH, MC, *U. S. Army*†

(With three illustrations)

CHRISTMAS 1944 was subdued, fearful, and forcibly quiet in Manila. The United States and Allied Forces had returned to the Philippines to stay and were in complete control on Leyte Island to the south. The Japanese military leaders were preparing as best they could for the expected invasions of the northernmost Philippines island of Luzon. The allied command speculated in general on the defenses of Manila and more specifically on whether it would be declared an open city by the Japanese. The enemy's decision on the latter question would dictate the tactics of the campaign in Luzon in the spring of 1945.

As events showed, the decision to make Manila an open city was not made by the Japanese high command. When the Southwest Pacific troops landed at Lingayen Gulf and advanced southward for the attack on the capital city, the Japanese Army decided to retreat into the Cibolo mountains to the east of Manila and the Zambales mountain to the west. However, the Japanese Marines, the remainder of their Naval forces, and some Army personnel decided on the suicide mission of defending Manila until the end, a decision which was to have the gravest effect on the civil population.

Three administrative measures adopted by the city of Manila during the latter stages of occupation by the Japanese drastically affected the lives of the citizens during the period of November 1944 and February 1945:

1. Although individual civilians were allowed to move in and out of the city through the Japanese military checkpoints, the effect of the restrictive measures by the sentries resulted in a cessation of travel. The rigid inspections of all cargo moving through the city, presumably for security purposes, stopped the free flow of food because of the merchants' fears of being accused of co-operating with the guerrillas in the farm areas.

2. The difficulties of movement within the city resulted in permission of the Health Department to bury bodies in emergency sites in household yards or on city parking strips. During the battle the population was forced to bury their dead where they could due to the intense fighting.

3. The division of Manila into two administrative areas was the outcome of the measures taken by the Japanese to blockade all the bridges in the city beginning in November 1944. The city government established two city halls, one on each side of the Pasig River and divided the health resources so that the minimum of disruption to health and welfare functions would result.[1]

Such was the setting for the final fight to free Manila. The two American spearheads, the 37th Infantry Division and the 1st Cavalry Division, entered the city on February 4, 1945. While the northern and extreme southern edges were little destroyed, the center of the city was being levelled. The business district north of and along the Pasig River became non-existent except for a few large, reinforced concrete skeletons of buildings.[2] All were blown up by the Japanese using aerial bombs detonated en masse along the street gutters. The bridges across the Pasig River were destroyed, and the Imperial Marines were ready to fight in the modern capital buildings south of the Pasig and within Intramuros (the old Spanish walled city). Included also was the key defensive zone of Fort Santiago, a Spanish strongpoint complete with dungeons. Civilians living in these areas and many others who had sought shelter from the destruction

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U. S. Army Photograph

FIG. 1. The area south of the Pasig River in Manila showing the complete destruction of the area. In the extreme right foreground, the portion of the walls of Intramuros. The building with the tower in the background was the University of the Philippines.

north of the Pasig were not allowed to leave.

The battle opened with attempts by U. S. forces to save the lives of as many civilians as possible by using rifles, machine guns and grenades to clear the Government buildings. The well-protected Japanese positions and stubborn enemy resistance eventually forced the use of tanks, mortars, and finally pin point air bombardment. The intensity of this defense is indicated by the casualties reported by the XXIV Corps for the first fifteen days of February—507 killed, 2,724 wounded. The casualties among the more than 50,000 civilian Filipinos forcibly crowded into Intramuros, the University of the Philippines hospital, Agricultural College, and other public buildings were tremendous. Some of these civilian casualties were definitely the result of Japanese retaliation against innocent citizens (grenades were thrown into air raid shelters where refugees were concentrated). Many other casualties were simply the hazards of war in a dense, overpopulated area. Some hundreds of bodies found later were executed political prisoners in the Fort Santiago dungeons.

The fight for Manila became a prolonged and terrible affair for the civilians—starving, thirsty, without electricity; gas, or other fuel; and affected by disease. Many died of wounds (estimate of total civilian wounded 12,000), and many more died of secondary complications resulting from burns, tetanus, and lack of medical care. Glenn estimated the mortality from 473 cases of tetanus was 82.1 per cent due to almost total lack of antitoxin or other medical care.[3] The unburied dead south of the Pasig, both civilian and Japanese military, will never be exactly known, but reliable estimates approximate 16,000[4] Japanese and over 22,000 civilian Filipinos. In addition to the battle dead, there were several thousand civilians who died during the period of the Japanese ban on the movement of bodies. Many others died in hospitals, prisons, and orphanages during January and February. These were buried in shallow graves or left unburied and stacked like cordwood in morgues, basements, or in unused hospital storerooms.

The resources of the United States military forces, supplementing the natural agricultural products of the islands, quickly restored Manila's food supply. Cattle from Luzon, sugar and rice from the southern islands, fuel (charcoal) to cook with—and the people were eating well again after four months of semi-starvation. Water continued to be a problem. There were a few artesian wells north of the Pasig River, also a few streams and ponds. Water hauled in trucks by the troops served the primary needs of 20% of the population. Two other sources were not available. The Pasig River is tidal and its water too salty for drinking. The normal supply of Manila, the mountain reservoir and the Ipo Dam in the mountains, was in the hands of the Japanese Army. Medical supplies were soon restored from Army supplies included in the initial pre-invasion planning of the Civil Affairs Section of General Headquarters. The Filipino doctors, nurses, dentists, and hospital attendants quickly went back to the remaining hospitals and clinics, but all hospital functions were conducted under very primitive conditions as far as utilities were concerned.

Attitudes toward burying the dead to prevent diseases among the living are modified by the weather and the useability of an area. In Germany dead bodies from bombings were considered to be non-infectious; and since fly breeding was minimal in winter, early burial was not indicated. The German Government authorities estimated that 10,000 bodies remained unrecovered in Hamburg even after two years. The most conservative estimates state than 70-80,000 bodies were decomposing in the ruins of German cities months after the war ended. However, in Manila with the heat of a tropical summer and the intended re-use of the city, the burial of the dead was an emergency.[5]

The requirement was for collection, removal, and burial of the dead together with reduction of the fly population generated by the long unburied dead in a tropical climate. By custom and legal authority, reinforced by an order from the Commander-in-Chief, the

U. S. Army Photograph

FIG. 2. A picture of the Pasig River showing the destruction, both north and south of the river, including the bridge. The tower in the background was part of the University of the Philippines and the Philippine General Hospital.

Photo: Author

FIG. 3. Stevedore or hay hook.

Manila City Health Department became the agency assigned to clean-up the dead, to remove garbage and trash, and to reduce the number of flies and rats. Additional missions were to provide enough emergency health protection so that U. S. troops would not become incapacitated due to disease. Since the Sanitation Section of the Health Department was charged with operation of the city cemeteries in addition to the usual sanitation services, the collection and burial of the civilian and enemy war dead was assigned to that section.

After conferring with the General Headquarters staff and Filipino authorities, the U. S. Army officer acting as head of the Health Department made a policy decision concerning such matters as methods of collection, mass burial, type of transportation, identification, and use of existing cemetery areas. However desirable individualization of collection, transportation, and burial would have been, under other conditions, practical necessity indicated other policies:

1. Collection: Use of hand labor, employing as circumstances directed, stretchers, rope and canvas slings, shovels, and stevedore hooks (on all bodies that had deteriorated to the extent that they could not be lifted in any other way). Revolting developments included the removal of putrefying bodies from six-story buildings so completely destroyed that no stairs remained. Eventually the dead (Japanese Marines) were dropped to the ground and then loaded into trucks. Wells, sewers, and all other sorts of closed inaccessible spaces were jammed with the remains of the fanatical Japanese fighting men and these bodies were exceedingly difficult to remove.

2. Mass Burial: This was finally decided upon as the only way of handling such large numbers of putrefying bodies. Often burned bodies were unrecognizable and unidentifiable even to the differentiation between soldiers and civilians because of severe burns and decay. Large trenches, two hundred feet long and ten feet deep, were bulldozed in the five cemetery areas and in certain public parks. Bodies were dumped into these pits until they were approximately two hundred in each pit. Then the bulldozer closed the hole, compacted the surface, and two "War Casualty" signs were placed, one at each end.

3. Transportation: Army trucks were the only vehicles available. Of all types, dump trucks were the most practical. With the addition of a canvas cover their ghastly loads were at least decently removed from sight. These trucks became familiar sights; and their smell, in spite of twice-a-day washing, was a constant reminder of their function. It is noteworthy that no trucks were ever stopped at their work by traffic or military police.

4. Identification: The impossibility of this task was accepted at the outset. There were no Filipino identification items in use except printed cards. These either burned, blew away, or became pulp in the rain before the burial details were formed. In addition, separation of nationalities was frequently impossible. Even determination of sex and age was often an impossibility.

5. The Attitude of the Catholic Church: The Archbishop of Manila, an aged (about seventy-two) and wise priest of Irish birth had seen the Japanese conquest, the destruction of Manila, and General MacArthur's return. His simple request was that eight lay brothers be assigned to ride the trucks

and to bless the remains as some of each load were most certainly Catholics. Only a few of these could continue the ordeal more than a week. Three carried on six days per week for the eight weeks required. Replacements were frequent. They did their job in a dignified way, without criticism, and in a thoroughly understanding manner—considering the technical difficulties of such burials.

6. The Men of the Burial Details: Eight teams were composed of one U. S. Noncommissioned officer or private and from six to ten Filipino laborers each. Again only a few of the Americans had the ability to withstand the psychological aspect of the work. With a few exceptions nausea, vomiting, and loss of appetite occurred after a few days. Sleeplessness and restless nights with nightmarish dreams usually brought need for relief after a week or less. The question of payment of the Filipino laborers arose early in the operation—by unanimous agreement they were given pay and one-half at the start and double ordinary day laborer's pay after one week. In addition, a solid meal of rice, fish or meat, tea, and fruit was furnished at noon daily.

There was never any question in the Health Department that the type of laborer familiar with a longshoreman's hook would pick up jewelry, watches, and other valuables found on or near a body. The Japanese military man had done some collection of valuables himself, and it was not unusual to see three or more wrist watches on one arm of a Marine corpse. The re-acquiring of such loot became merely a personal reward in the fortunes of war. Other types of small loot began to appear when bodies were perforce dropped from high buildings. The search of pockets and packs was necessary to prevent any concealed hand grenades from exploding on impact from the drop. This occurrence happened twice, fortunately no one of the burial details was injured on either occasion.

The total number of bodies handled during the eight-weeks collection and burial was approximately 39,000 bodies and was accomplished by about 80 men supervised directly by only one officer. Estimates of the number of dead Japanese were about 16,000, leaving over 23,000 civilians killed by, or due to, enemy action. Approximately one thousand six hundred civilian corpses buried in shallow graves or found dead in homes, hospitals, and on the streets north of the Pasig River were buried in the same trenches.

Today nations threaten that atomic or hydrogen bombings may cause a hundred times the casualties of this experience in cities smaller than Manila. A question that may well be asked is, "Who will remain in such a bombed city to bury the dead?"

If any agency remains to work in a bombed area or comes into a devastated city in the United States, the responsibility for burial of the dead is clearly that of the health department. All the existing Civil Defense manuals indicate that the emergency burial and mortuary services in a civilian disaster are a responsibility of local civil defense health services. When the disaster is radiological in nature, the removal of the dead may have to be delayed to allow for safe handling due to decay of the radioactivity.

To quote from Dr. Whitney's paper on Disaster Management, "If modern weapons are used on densely populated areas, the number of dead will be so great that undoubtedly temporary suspension of some laws and customs will be necessary. Methods of disposal will be dictated by the availability of personnel, equipment, time and space."[6]

These conditions were present in Manila in early 1945, and the methods evolved were improvisations made necessary by the totally unexpected and unplanned for occurrences in that unfortunate period of history.

ACKNOWLEDGMENT

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INTERNATIONAL GROUP OF MEDICAL OFFICERS VISIT ARMED FORCES INSTITUTE OF PATHOLOGY, WASHINGTON, D.C.

U. S. Air Force Photo

While visiting in the United States to attend the annual meeting of the Aerospace Medical Association in Los Angeles, Calif., this group of officers visited the Armed Forces Institute of Pathology in Washington, D.C.

Front Row (L to R): Col. M. Baeza, Deputy Dir. Med. Svcs., Chilean Air Force; Maj. Gen. Yasuo Ohmura, Med. Staff, Japanese Self Defense Force; Maj. Park Kyong Wha, Med. Staff, Republic of Korea Air Force; Brig. Gen. Chang Duk Sung, Surg. General, Republic of Korea Air Force; Capt. Wm. Silliphant, MC, USN, Director, AFIP; Maj. Gen. Oliver K. Niess, Surg. General, USAF; Col. Frank Townsend, USAF (MC), Deputy Director, AFIP; Brig. Gen. Raul T. Prieto, Surg. General Mexican Air Force; Col. Pelagio G. Potenciano, Surg. General, Philippine Air Force; Col. Fritz Dorener, Med. Staff, West German Air Force; Col. Chang Pyung Kun, Med. Staff, Republic of Korea; Col. Clyde Currier, USAF (MC), Office of Surg. Gen.

Back Row (L to R): Brig. Gen. Cesar Gagliardone, Chief, Paraguayan Armed Forces Med. Serv.; Maj. Raphael Benchimol, Med. Staff, Brazilian Air Force; Col. Glimpo Molina, Med. Staff, Chilean Air Force; Maj. Gen. Li Hsu-Chu, Surg. General Air Force, Republic of China; Capt. Humberto S. Romero Ruiz, Med. Staff, Venezuelan Air Force; 1st Lt. Alberto del Castillo y Guerra, Med. Staff, Cuban Air Force; Brig. Gen. Victorio V. Olguin, Director General, Health Services, Argentina Air Force; Capt. Urs Baumann, Ass't. Chief, Swiss Institute of Aviation Medicine; Lt. Col. Arne Frykholm, Med. Staff, Royal Swedish Air Force; Dr. H. Velarde, Univ. of East Medical School, P.I.

Stuttering: Clinical and Electroencephalographic Findings

By

CHESTER M. PIERCE, M.D.,† AND HARRY H. LIPCON, M.D., F.A.C.P.‡

PRESERVED hieroglyphs tell us that stuttering was a problem to the Egyptians. In Graeco-Roman times, celebrated observers such as Hippocrates, Celus, Plutarch, Cicero and Galen commented on stuttering and offered solutions based on theories of emotion and physiology. Later the problem engaged the attention of such men as Avicenna, Guy de Chauliac, Bacon, Diffenbach, Hunt and Kussmaul, all of whom prescribed assorted remedies.[1,2]

Psychiatric observations, still valid, were made 400 years ago when Mecurialis indicated that fright could cause speech defects. The opinions of Moses Mendelssohn, in the 18th Century were even more sophisticated whereby he anticipated descriptive psychologists. He told that stutterers have less difficulty when speaking slowly, when singing, or when alone. The stuttering increased if strangers were present or if the subject was placed under emotional strain.

The present paper again confirms Moses Mendelssohn and attempts a survey of the problem of stuttering as seen in naval recruits. Like the other papers in this series,[3-9] the object was to seek physiologic and psychosociologic channels for the further investigation of symptomatic immaturity habits (enuresis, sleepwalking, stuttering). These primary inquiries reveal that in young adult males, enuresis is related to somnambulism (by abnormal brain waves, frequency of genitourinary complaints, family history of both enuresis and somnambulism, past history of both enuresis and somnambulism) but is not related to stuttering.

MATERIAL AND METHOD

An experimental group of 36 recruit stutterers were compared to a control group of 36 recruit non-stutterers in regard to electroencephalographs, history concerning symptomatic immaturity habits and objective neurological findings. All the history taking and neurologic evaluations were performed by the same observer.

The stutterers were men who were observed by psychiatric examiners to have this habit when they entered service. The stutterers were recalled in their 4th to 7th week of training to see if the habit persisted during psychiatric interview and to note if the recruit's company commander's report commented on a speech problem. If both criteria were satisfied and the recruit admitted a past and current history of stuttering, he was included in the study. There were many men who did not meet all these criteria and as a result were excluded from further consideration.

As a working definition stuttering was taken to mean an intermittent, spastic, habitual repetition of words and/or syllables. Each stutterer was questioned concerning factors which increased or decreased his fluency and the factors he believed significant in the onset of his stuttering.

During the interview the quality of the stuttering was estimated on a basis of moderate, severe or very severe (1 + to 3 +). Moderate or 1 + stuttering was tabulated when the subject could converse for two minutes without hesitancy or stuttering. Severe or 2 + stuttering was noted for those men who had some stuttering within each two minute interval of dialogue. The very severe or 3 + stuttering was reserved for subjects who continued to stutter throughout

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The opinions or assertions contained herein are the private ones of the writers, and are not to be construed as official or reflecting the view of the Navy Department or the Naval Service at Large.

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the whole observation period. As it happened, the 3 + stutterers were all persons who had extreme agitation as they spoke which was characterized by marked hesitancy, rigid contraction of limb and trunk musculature, facial grimacing, use of accessory respiratory muscles, smacking sounds and explosive speech. Frequently the eyeballs of such men would rove upward so that only the whites of their eyes were visible, as they struggled to express themselves.

Non-stuttering recruits were men in their 4th to 7th week of training who were directed, at random (by their company commander), to report to the Neuropsychiatric Unit for the purposes of this study. No man objected to being a volunteer in this experiment when its purposes were explained to him. Interviews, past history and available documents on all these men, failed to reveal any speech difficulty.

Electroencephalographic tracings of all 72 subjects were made on a Grass machine, with the technique of 16 lead monopolar and bipolar recordings, bilaterally, from the frontal, temporal, parietal and occipital areas. All the recordings were made within a period of 3 hours after eating.

In the neurologic examination, special attention was devoted to any tongue deviation and to any disparity in arm swing as the subject walked. Previous workers have emphasized the importance of tongue deviation and disparate arm swing in considering a neurophysiologic etiology of stuttering. The authors are unaware of any controlled or uncontrolled study which correlates these traits with electroencephalographs.

To parallel the previous research, the clinical history focused on past and family history of enuresis, sleepwalking and epilepsy. A careful review of the genitourinary system was recorded. Data on the family history of stuttering was collected. Handedness (i.e., how does one write, eat, shoot, kick, throw, bat), forced change in handedness and any known evidence of unusual birth circumstances were noted. A past history of injuries, accidents, sickness and periods of unconsciousness was obtained also.

Results

General Factors: The average age of the stutterers was 19.3 years as compared to 18.7 years for the non-stutterers. In both groups, the age range was 17-24 years. The average stutterer completed 10.4 years of schooling, in comparison to 10.1 years completed by non-stutterers. In both groups there were two Negroes. In the experimental group 3 men were very severe stutterers (3 +), 22 men were severe stutterers (2 +) and 11 men were moderate stutterers (1 +). All subjects were from middle western and southern states.

E.E.G.: Eleven stutterers and seven non-stutterers had abnormal brain waves. In general these records revealed slow activity (4-5/sec.) of increased amplitude, in all areas of the head, with buildup during hyperventilation.

Seven of the moderate (1 +) stutterers, three of the severe (2 +) stutterers, and one of the very severe (3 +) stutterers had abnormal tracings. One of the severe (2 +) stutterers had localization of slow activity in the parietal areas, bilaterally.

There is no statistical difference in the number of abnormal brain waves encountered in the two groups. Nor is there a significant correlative trend between abnormal brain wave pattern and the degree of stuttering.

Onset of Stuttering: Two-thirds (24) of all the stutterers stated that as far as they knew, they had stuttered as long as they had been able to talk. The remaining 1/3 (12) averaged 10.3 years at the age of onset of stuttering. Their age range at onset was 3 to 16 years.

The latter group implicated a variety of precipitating causes for their stuttering which included: following a delirium from childhood illness at age 6 (1 man); sibling rivalry to mimic a brother at age 10 (1 man); following a fractured arm at age 13 (1 man); a frightening experience such as having a haircut or being locked in a closet at ages 3, 7 (2 men); after difficulties in school at ages 8, 15 (2 men); and following divorce of parents at ages 12, 13, 16 (4

TABLE 1

SITUATIONS ALLEGED TO AFFECT FLUENCY IN STUTTERERS

Factors Increasing Stuttering		Factors Decreasing Stuttering	
Condition	Number of men with the condition	Condition	Number of men with the condition
1. Being anxious or angry	18	1. Being rested, relaxed and deliberate	17
2. Talking to authority figures	9	2. Talking to close friends	10
3. Not being deliberate	7	3. No known specific condition	7
4. Being in a new situation	5	4. Growing older	6
5. Talking on phones	4	5. Being anxious or angry	4
6. Specific pronunciation of letter or number (0, 8, s, d)	4	6. State of self-confidence	4
7. Forced to be attentive	4	7. Talking to girls	2
8. Being depreciated	3	8. Singing	2
9. Being in a crowd	2	9. Forced to be attentive	2
10. No known specific condition	2	10. Smoking	1
11. Saying his own name	2	11. Alcohol	1
12. Talking to girls	1	12. Talking on a phone	1
13. Speaking native language	1	13. Being in a new situation	1
14. Desire to be aggressive	1	14. Being aggressive	1
15. Increasing age	1	15. Speaking foreign language	1
16. Being looked in the eye	1	16. Being in close quarters	1

men). Three of these last 4 men began to stutter when they had to live alternately with first one parent and then the other. One man began stuttering at age 8 but ventured no opinion as to why he started. Only 2 men who could recall the onset of stuttering had abnormal brain potentials. Both of these men began stuttering after divorce of their parents.

Factors Which Increase or Decrease Stuttering: The experimental group volunteered a host of conditions in which they were more or less likely to exhibit their speech impediment. In general, one will not stutter if he is in a controlled, secure, and familiar situation. (Table 1.)

Family History of Stuttering: Nineteen stutterers and zero non-stutterers had a family history of stuttering. In the 19 families of the stutterers, there were a total of 33 known stutterers. The family history ratio of 19:0 is of statistical significance ($X^2 = 23.15$, $P < 0.001$). Eight of the men with positive family histories of stuttering had abnormal brain waves. Thus, there is a trend but without statistical significance in the number of stutterers who have both abnormal brain waves and family histories of stuttering.

It is also of statistical significance ($X^2 = 10.73$, $P < 0.001$), that in the households of 11 stutterers and zero non-stutterers, there was a person or persons who stuttered. Only 2 of these stutterers had abnormal brain waves. In these 11 homes, a total of 15 persons, usually a parent or sibling, also stuttered.

Relationship of Stuttering to Enuresis, Sleepwalking and Epilepsy: In this study comparison of the 2 groups reveals no significant relationship between stuttering and enuresis, sleepwalking and a known family history of epilepsy. (Table 2.) Only 1 man, a stutterer, had an abnormal brain wave, a positive family history of stuttering and a family history of enuresis. This man had a personal history of enuresis.

Genitourinary Complaints: In all, 11 stutterers had 31 GU system complaints. Six controls had 8 GU system complaints. Thus

TABLE 2

RELATIONSHIP OF STUTTERING TO ENURESIS, SOMNAMBULISM, AND EPILEPSY

Stutterers			Non-Stutterers		
Complaint	No. of men with complaint	No. of men with abnormal brain waves	Complaint	No. of men with complaint	No. of men with abnormal brain waves
Past history of enuresis	4 (2 currently enuretic)	1	Past history of enuresis	5 (4 currently enuretic)	1
Family history of enuresis	9	4	Family history of enuresis	7	0
Past history of sleepwalking	6	1	Past history of sleepwalking	3	1
Family history of sleepwalking	2	0	Family history of sleepwalking	1	1
Family history of epilepsy	4	0	Family history of epilepsy	2	0

the experimental group voiced nearly 4 times (31:8) as many GU complaints as the control group. However, there is no definite relationship between abnormal brain potentials and GU complaints. Only 1 control, a man who complained of nocturia (and an enuretic), had an abnormal brain wave and GU complaints. Only 2 stutterers had the combination of abnormal brain wave and a GU complaint. One of these men (the enuretic mentioned in the previous section) told of frequency, urgency and hematuria. The other stutterer with an abnormal tracing complained of chronic costovertebral angle tenderness.

Handedness: There is no definite relationship in this experiment between handedness or a forced change in handedness and stuttering. Twenty-nine of the controls and 28 of the stutterers were completely right handed. Seven of the controls and eight of the stutterers had some degree of ambidexterity, e.g., write and throw with right hand but eat, kick and bat left sided. There were no completely left sided individuals.

Three stutterers and no controls had been forced to switch handedness when they were learning to write. Two of these men (2 + stutterers) had normal brain tracings. The third man (3 + stutterer) had an abnormal brain wave.

Neurological Findings: No striking neurologic abnormalities were found in any of the subjects. However, in the experimental group, 4 men had some aberrancy of extraocular motion and in 3 of these instances, the subject had an abnormal brain wave. The men with abnormal tracings included a man with left ocular paresis, one with nystagmoid action and another with weakness of upward gaze (right eye). One stutterer had nystagmoid motion without an abnormal tracing. Another stutterer with a normal brain wave had evidence of an iridectomy of the right eye.

Two stutterers, one with an abnormal brain wave, were unable to identify common scents if one side of the nose was blocked. Another stutterer with an abnormal electroencephalograph had a 3 × 2 cm. depression in his skull, over the right frontal region.

Nine persons in each group had a deviation of his tongue when it was protruded. In the control group seven tongues turned to the right and 2 turned to the left. In this group 1/3 (3) had abnormal tracings. The experi-

mental group contained 6 men whose tongues deviated left and 3 men whose tongues turned right. In this group 2/3 (6) men had abnormal tracings. To look at it from a different view, approximately 1/2 of the men in both groups who had abnormal brain waves also had a tongue deviation. However, the total number of cases with such disturbances is too small for further analysis.

Two controls moved their right arm less as they walked. Six of the experimental group moved their arm less when they walked and an additional 14 moved their left arm less as they walked. The fact that 20 stutterers and only 2 non-stutterers had disparate arm movement during locomotion, is of statistical pertinence ($X^2 = 18.91$, $P < 0.001$). Six of these stutterers had abnormal brain waves. Perhaps it is more meaningful that eight of the eleven stutterers with abnormal brain waves, had a tongue deviation and/or incoordinate arm swing. This sub-group of men is over 22% of the total in the experimental group. The control group contains only 8% of its total in this sub-category. In interpreting this data the factor of possible subjective bias of the examiner must be acknowledged since at the time of the experiment it was known which men were stutterers and which men were non-stutterers.

Miscellaneous Factors: There seems to be no definite relationship between a history of unconsciousness and stuttering. Nor is there, in this material, a constant association between a serious past medical illness and stuttering.

Eleven stutterers, one of whom had an abnormal brain wave, acknowledged periods of unconsciousness ranging from a couple of minutes to several hours. Of the non-stutterers, 18, one of whom had an abnormal brain tracing, admitted similar periods of unconsciousness. Most of these episodes were subsequent to an accident, while a few were associated with severe febrile episodes. In marked contrast to our previous studies, no subject became unconscious as a result of an athletic injury.

A serious medical illness such as meningitis, pneumonia or typhoid, was a part of the medical histories of five stutterers and two non-stutterers. Two of these stutterers and one of the non-stutterers had abnormal brain waves.

Four of the experimental group and zero of the controls knew of an unusual circumstance atttending their birth. Only one of these stutterers had an abnormal brain wave. He was the older of a pair of identical twins. Another stutterer also was the older of a twin set. A third stutterer was a post-mature baby (10 months, 1 week) delivered by Caesarian section. The fourth man believed he suffered severe asphyxiation following cord strangulation.

Discussion

It would seem that stuttering is a syndrome in which psychological, social and organic factors must be considered. This is in agreement with the other symptomatic immaturity habits which we have studied. However, the exact role of any one factor and its relationship to the other factors, in a given individual, must await more research.

Many outstanding authorities on stuttering wonder about the precise aspects of organic and psychosocial etiology.[10] Johnson[11] phrases the "crucial issue" as being whether just prior to and during stuttering, psychologic or neurophysiologic factors or both are sufficient to cause stuttering.

Pioneer work in utilizing the moments just prior to and during stuttering, therapeutically, was accomplished over 40 years ago. Swift's ideo-visual theory was based on his finding that, unlike normal speakers, the stutterer suffers a diminution or loss of the power to visualize the picture of the word he is about to pronounce.[12] By training the subject to picture the content of his thoughts the stuttering was ameliorated.[13] Dunlap,[14] in an effort to understand why boys are more commonly afflicted with stuttering, believed that stuttering developed secondarily, in order to refrain from allowing obscene utterances at socially inappropriate occasions. By 1935, Bleumel[1] had elaborated fully another ideomotor theory. He reasoned that at the instance of stuttering, the subject suffered a

transitory auditory amnesia, in which he was unable to "hear" clearly the word in his mind.

During the subsequent two decades, with the growing use and acceptance of the concepts of dynamic psychiatry, there was greater stress on the total personality of the stutterer. In such investigations, it was shown repetitively that the stuttering was a manifestation of social and emotional maladjustment.[15–17] Indeed, to Meyer, the "inescapable conclusion" is that stutterers are usually products of an emotionally turbulent atmosphere bereft of security and stability.

Amongst naval recruits there is evidence that psychic stress both produces and sustains the habit of stuttering. A severe fright, an overwhelming infection or an intense frustration may be the vehicle for speech difficulty. To peruse the situations which increase or decrease stuttering, as well as the conditions alleged to have precipitated stuttering, one is impressed by the threatening situations surrounding the speech trouble, i.e., illness, accident, a provocation to deep anger (which, if expressed, might result in severe penalty), loss of parental support and lack of personal security.

In this respect it is important to emphasize that in those 2/3 who could not recall the onset of stuttering, there may have been in action, very powerful repressive and suppressive forces. Even in the event that stuttering did begin when the individual began to talk, it would be essential to know more of the psychosexual development and environmental influences at that time, before a more adequate understanding could be reached. Of course, the same information would be desirable, perhaps more so, in the case of the remaining 1/3, since there is the possibility that historical distortion may be serving neurotic defenses concerning the habit.

It was discovered that recruit sleepwalkers frequently had their disorder begin at about age 10.[4] This was the age when many of these youths were separated from their parents or became residents in a home where one of the parents was infirmed. Those recruits, in this study, who are able to recall the onset of stuttering, also implicate age 10. Present data do not allow even a speculation to the incessant and always baffling questions in psychosomatic research of "symptom choice." Thus it is found that in naval recruits, those who stutter and those who sleepwalk, not infrequently list age 10 as the age of onset of their disorder.

Naval recruits who sleepwalk have many constitutional similarities to the enuretic. The stutterer does not demonstrate parallel constitutional similarity but does share the fact that his habit becomes manifest under emotional duress. If we then theorize that stuttering, like enuresis and sleepwalking, is the result of a combination of psychological, social and organic factors, there must be some means as to how organic features could be operative in the etiology.

Although verbal communication is the basis of all social progress, it must be remembered that the essential function of the peripheral organs of speech, is to subserve biologically imperative duties, e.g., swallowing, respiration, mastication. Thus the continuity of humanity depends only in a general way on speech, which is a by-product of the life sustaining organs. These organs are under the control of the central nervous system. Therefore, it is natural to inspect the integrity of the central nervous system in health and in disease, to see if it has a discernible relationship to stuttering.

The reader is referred to Hecker for a discussion of the anatomy of speech.[18] Fletcher[2] discusses a wide variety of physiologic findings in stutterers, including those under central nervous system domination (breathing irregularities, changes in blood vessel calibre, pulse changes, galvanic deflection and acid-base shifts). The discussants of Blanton's paper conjecture about a lesion at the level of the synapse, in the stutterer.[19] Dr. Meyer, discussing the paper of Abt et al.[20] indicates that speech loss may be a result of faulty maturation of the pyramidal tracts.

From a more clinical viewpoint, all physicians commonly encounter speech aberrancies in a wide variety of diseases such as paresis, delirium, multiple sclerosis, brain

hemorrhage, hypothyroidism, etc. In a chronic psychosis from hemp, a patient may lose completely the ability to speak for a period of years. Upon spontaneous recovery, such patients say that they were making efforts to speak but were unable to do so.[21] This plight of futile effort is analogous to that of the stutterer.

It is likely that at times, when speaking, the stutterer has a defect in his consciousness. Early reports showed that in electroencephalographs taken during stuttering, the stutterers compared to controls, were significantly slower and with a greater amplitude.[22,23] More recent studies on the flicker fusion threshold, a sensitive indicator of neurologic integrity, demonstrate a lowering of the threshold in the typical stutterer.[24]

Perhaps more refined EEG techniques and the employment of quantified methods for wave form appraisal would have resulted in uncovering more abnormalities in the experimental group. Such refined procedures could include sleep tracings and tracings done while the patient was speaking or made insecure or coerced in some harmless manner.

Staying within the boundaries of the obtained results, however, forces the conclusion that with the means of detection employed in this study (brain waves, objective neurologic findings, past medical histories) an organic lesion is not necessary nor sufficient to produce stuttering. Perhaps in some stutterers the organic component facilitates the development of stuttering in a person who is placed under certain psychosocial stresses.

To locate, anatomically, where a stutterer might have a defect is not possible from this study. Yet, the combination of abnormal brain waves, tongue deviation and/or incoordinate arm swing, in 22% of the stutterers, suggests that there may be such a defect. A defect may exist in the cerebellum or corpus striatum. Other clinical data suggest that the defect might be cortical or somewhere in the reticular formation or in the pyramidal tracts. Perhaps the deficiency is generalized and related to chemical changes in the brain. Maas[25] believes that stuttering may be secondary to a birth injury, probably affecting the speech area or speech center association tracts. Two thirds of the experimental group believed they had stuttered ever since they had been able to talk. This finding does not prove or disprove the possibility that birth injuries are of etiologic significance in stuttering.

This study did not reveal significantly more known birth traumata in the experimental group. There were more twins in the experimental than control group. It is stated that stutterers are more often a member of a set of twins than are non-stutterers.[26]

Interpretation of family history findings is difficult since it may mean that stutterers imitate those whom they hear, or have gone to greater pains to discover any relative similarly affected. Still another possibility is that there is inherited at least a predisposition to stutter, which will manifest itself, by means of chemical influence of genetic enzymes, under stimulus of appropriate psychosocial or organic stress such as an unhappy home situation or a febrile delirium. Many investigators have noted the increased family history of stuttering in stutterers.

Once more, as many others have noted, handedness or a forced conversion in handedness, is found not to be a major concomitant of stuttering.[27]

Previous workers have found stuttering and enuresis to be associated.[5,28] Also, Abt et al. discovered statistical significance in the fact that children, enuretic at 3 or above, have a delay in their speech development, which averages 4 months when compared to controls.[20] However, in naval recruits, neither enuretics nor sleepwalkers had more difficulty with stuttering than a control population. In the present inquiry, stutterers do not indicate more difficulty with enuresis than do controls.

Nevertheless, the stutterer does have more genitourinary complaints, such as frequency, urgency, nocturia, hematuria, and costovertebral angle tenderness. This too may reflect a general increased emotionality (psychophysiologic traits) but for reasons stated in other communications, we believe that this finding could be subsequent to a central nervous

system deficit. Lesions in the central nervous system, as seen within the laboratory and in the hospital, may result in a variety of genitourinary disturbances.

From this study the authors conclude that stuttering has psychologic, social and organic interrelationships. The quantity of each of these components may vary from all to none, in an individual subject. The habit is sustained depending on how these components are modified. For the navy, the stutterer, unlike the enuretic and sleepwalker, does not constitute a gigantic economic waste through loss of available manpower, since as a group they do much better in training and also, their habit only rarely (in 3 + stutterers) obliges separation from the service.

For the purposes of further study, more personality clarification with special emphasis on psychosexual history and environmental influences, is needed. Further knowledge of the genitourinary system is indicated as are more thorough studies, both in the clinic and in the laboratory, to define the role of the nervous system on the speech patterns and the renal system.

The important work of speech correction and elucidation of the psychosomatic accompaniments at the moment of stuttering must continue to be done by civilian agencies. This is due chiefly to the relative paucity of clinical material as it now exists in the service. At present few men are unable to enter flight or submarine training (where stuttering might interfere with the use of essential communications systems) on the basis of speech impediment.

Despite the obvious limitations of subjective impressions, all clinicians and particularly psychiatrists, must rely heavily on such experience. Accordingly, we should like to record a few such attitudes. Our impressions indicate that the act of stuttering is used frequently, as a mechanism for displaced exhibitionism in which the stutterer sues for attention or maneuvers to inspire sympathy or terror from his audience for his pitiable or angry state. Often the audience in such situations is one which promotes inferior attitudes in the stutterer. The stuttering then counteracts some of the emotional immobility which has resulted in rendering the stutterer consciously or pre-consciously inferior, during his speaking. Rickles[29] has commented on the long recognized relationship between genital exhibitionism and stuttering in which the speech difficulty may serve as a displacement of exhibitionism.

Summary

Thirty-six stutterers and 36 recruit nonstutterers are compared by electroencephalographs, history of symptomatic immaturity habits (enuresis, somnambulism) and neurological findings. Also compared were histories of sickness, injury, periods of unconsciousness and handedness dominance.

Two thirds of the stutterers believed they had stuttered all their lives. There were no statistically significant differences in the two groups as regards: abnormal electroencephalographs, past history of serious illness or injury, known birth trauma, periods of unconsciousness or handedness dominance. Also the two groups were compatible in regard to a past or family history of enuresis, somnambulism, and epilepsy. Significant findings included the fact that 22% of the stutterers and only 8% of the controls had abnormal EEG's and associated incoordinate arm swing on walking and/or deviation of the protruded tongue. The experimental group had four times as many genitourinary system complaints. Stuttering seems less likely if the subject is in a secure and familiar situation.

The results are interpreted to demonstrate that in order to produce and sustain the habit of stuttering, there are interrelated factors of a psychic, social and an organic nature. Stuttering in naval recruits does not seem to be allied to the other common immaturity habits of enuresis and somnambulism. There is some discussion of theoretic and research aspects of stuttering, as well as a brief review of the literature on the subject.

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Nursing Care in Maxillofacial Surgery*

By
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FIRST of all may I commend the Program Committee for including a discussion of Nursing Care in this, the Ninth Annual Military-Medico-Dental Symposium for the Armed Forces of the United States. For it is only as all of us learn and work harmoniously together can we attain our united goal—to prevent and ease the suffering of mankind by giving the *highest* kind of service to people *everywhere* regardless of race, color or creed.

Rather than presenting a pedantic treatise on the subject: "Nursing Care in Maxillofacial Surgery" I would prefer to tell you about a person who became a patient to whom I have had the privilege of giving bedside and continuing care since last April (1958) when I received your kind invitation to speak here today.

This is the story of Mr. K., a very fine 37 year old married Negro who lives happily with his wife and seven children in a modern housing development in the heart of a large industrial city. Until the Fall of 1957, he was employed as a stevedore—a longshoreman at the local waterfront. At that time he went to a dentist for the extraction of an aching lower left molar tooth. Following this, he continued to have pain on the left side of his face and jaw for about a month. Then, one day he went to the office of the industrial nurse and asked her for an aspirin. This older, understanding, motherly nurse remarked to me later, when I called to ask her about Mr. K., that when an employee requested an aspirin that very often he had a "hidden agenda"—he had *more* than a headache or a toothache if only the nurse would *look* and *listen*. This particular nurse dispensed the aspirin according to the industrial physician's standing order. She did *look* and *listen* after which she suggested to Mr. K. that he might plan to go to the Out-Patient Department of a local hospital since his dentist was away enjoying a much needed vacation. First he hesitated and then immediately found many excuses for not accepting her suggestion. Some of his excuses were: "Perhaps the real reason for the misery was that he ate 'submarine sandwiches' every day for his lunch and maybe the *'chewy,'* crusty, crunchy bread might have hurt the socket where his back tooth was pulled. Besides, his new boss mightn't like it if he took the morning off." These excuses did not deter the nurse. She *looked* and *listened* a little more. Then both mutually agreed that she would call his "boss." Arrangements were made for Mr. K. to go to the Out-Patient Department the next day. He seemed quite happy when the nurse told him that his "boss" said: "O.K., we owe him a few days time off anyway."

Records from the Dental Clinic of the Out-Patient Department revealed that the examining dentist had discovered a small mass on the left floor of his mouth which extended to the gingiva. A biopsy was taken. The pathologist reported that Mr. K. had an epidermoid carcinoma and suggested immediate referral to the Tumor Clinic. Here, the Head Nurse arranged for and participated in an informal, friendly talk with Mr. and Mrs. K., Miss M., the social worker and Dr. D. to explain the situation and answer any questions. The physician strongly urged that radical surgery was indicated. Mr. K. refused and asked for a possible alternate. Mrs. K., respecting her husband's "manliness" and his position as head of the family, agreed. Mr. K. chose to have X-Ray Therapy. Later Mr. K., who appeared to be very

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intelligent and whose formal education terminated in high school when he reached sixteen years of age, told me that the following were the many reasons for his decision. Fear of mutilating surgery was predominant. "How would he look?" After all, "you face the world with your face." How could he enjoy kissing his wife and their six children goodnight in "the same old loving way?" Would his "boss and co-workers mind looking at him with his mouth and jaw half gone?" Would this interfere with his making a living in the future? If he couldn't eat or drink properly would he be strong enough to work? Could he breathe correctly? Could he inhale cigarettes? After all, cigarettes were his "second food." In addition, his wife was awaiting her seventh baby. He felt that "she needed him" at this time. Besides, for family and economic reasons he had "saved up his vacation time to care for the other six children while she was in the hospital for five days." Further, he confided that he had had problems with excessive drinking of alcoholic beverages in his earlier life when he had been under "a great deal of pressure." He had gone to ALCOHOLICS ANONYMOUS and received tremendous help. He said he returned to his previous religious affiliation, sang in the church choir, had joined a group who sang negro spirituals for entertainment. From this he received a great deal of "joy and relaxation." If he couldn't continue this avocation, might he "return to drinking?"

In making this decision to have X-Ray Therapy, Mr. K. was allowed to exercise his free will, a democratic right of all free men. Mr. K. had all his teeth removed and received a continuing course of X-ray Therapy after which he had complete relief from his pain. He returned to his work. Although a report from a biopsy was "negative" after a six month period, nevertheless, after a nine month period he started to complain of pain again. He called on his friend, the industrial nurse, who, again dispensed the aspirin, looked, listened and guided Mr. K. back to the Tumor Clinic the next day. She made such explanations that he understood it was perfectly all right to return *before* his next "follow-up" appointment.

The clinic physician in the Tumor Clinic noted that there was invasion of the lower side of Mr. K.'s tongue, the floor of his mouth was ulcerated and indurated and there was mandibular lymph node involvement of his left neck as well as involvement of the ramus of the mandible. Admission to the hospital for surgery was advised.

It was at this time that I first met Mr. K. immediately after his hospital admission. He had agreed to surgery because he said he knew he had cancer and if he didn't "take a chance on surgery" he might "die of starvation" or eventually "choke to death." Further, he felt that the pain would increase and he might become "a dope addict" and that "wouldn't be very good for his children to see." He sat with his head in his hands—the picture of dejection. He seemed quite depressed, stating that "he had committed a sin, that it was his *own* fault—that he had made the *wrong* decision—surgery might have gotten all the roots out, etc., etc." He was upset because his cigarettes "tasted rotten." He realized that there must be a "foul smell to his breath." He sensed that his wife and children avoided "his nearness." He told me that even nurses and doctors "wrinkled their noses" in *silent* disgust. (Doctors and nurses should have been created without noses.)

Since his surgery was not of a critical emergency nature there was sufficient time to spiritually, psychologically and physically prepare Mr. K. for a Commando Surgical Procedure. This means, in simple terms, that he would have a radical dissection of his neck, a partial removal of his mandible and tongue (hemimandiblectomy and hemi-glossectomy). Tracheostomy would be carried out as a routine and prophylactic measure because there would be danger of bleeding within the mouth and because this bleeding might precipitate vocal cord spasm. This would constitute real danger. The musculature of his tongue would be detached from the mandible. This might render the tongue less stable and prone to fall back thereby

obstructing his airway. The nurse gave Mr. K. a great deal of support and encouragement by observing and listening patiently to all of his fears about facial disfigurement, loss of speech and swallowing, etc. She assured him that she had taken care of many patients who had problems similar to his; therefore, to a great extent she understood how he felt. She worked diligently with Mr. K. to determine which mouth wash would be the most effective since he was so concerned about the odor of his breath. Finally Mr. K. decided that a tincture of myrrh solution seemed to be the best. Between mouth washings he sucked on chlorophyll tablets. The nurse planned for another man about Mr. K.'s age who had had a Commando Procedure to visit with him. This gentleman showed Mr. K. how he had learned to suction his own tracheostomy tube. Another man who had had this same surgery a few months previous and was returning to the Speech Therapy Clinic came over to the hospital to *say* "Hello."

The nurse contacted Miss M. in the Social Service Department. Arrangements were made to help Mr. K. and his family during this difficult period. Assistance was forthcoming through the coordinated efforts of the American Cancer Society, the State Welfare Department (Aid to Dependent Children), and the choirmaster and pastor of Mr. K.'s church. The latter visited Mr. K. just before surgery. This was a source of much solace and comfort. The day before Mr. K.'s surgery was Sunday and his birthday. Although the usual hospital policy doesn't include visiting by young children, a party was planned. The student nurses made a birthday cake and favors. Mr. K. and his entire family dressed in their Sunday best were invited to the solarium near his room in the hospital and a grand time was had by all. This kind of activity was considered part and parcel of quality comprehensive nursing care.

After a thorough checkup to be sure that he was in good physical and nutritional status Mr. K. was prepared to go to the Operating Room. During the preparation he told his nurse that he thought he was going to die. She quietly asked him why. He had no specific answer, he said he had a "hunch." This was immediately reported to the surgeon who cancelled the operation until he, the anesthetist, and the nurse had time to talk more with Mr. K. about how he felt. The following day Mr. K. went to the Operating Room for Surgery after which he was taken to the Recovery Room where he received constant, conscientious, compassionate care. The nurse well knew that the most hazardous, serious and severe complications have their inception during the hours immediately after surgery. She realized, too, that a moment's ignorance or neglect can completely negate the results of an otherwise successful surgical venture. Therefore, in additional to general post-operative care, scrupulous attention was given to the following: that,

1. Mr. K. had a *free airway* maintained at all times. This entailed meticulous craftsmanship on the nurse's part. A moment of haphazard management—a moment of obstruction might have induced a fatal asphyxial episode—a moment dealing with life or death. Checking the patency of the tracheostomy tube, preventing obstruction from within and without, and checking and recording the vital signs were a constant process. Tachycardia and dyspnea were watched for. It might have been difficult to detect any cyanosis which appeared on Mr. K.'s skin.

2. Mr. K. had *sufficient oxygen* to supply every cell in his body. Moisturized oxygen was given via his tracheostomy tube. The oxygen catheter was easily kept in place with the aid of a light plastic "tracheal collar." The oxygen made Mr. K. feel "less strangulated." The nurse noted that the oxygen had improved the quality of his pulse and respiration and he was less restless.

3. Mr. K. was *not bleeding* intraorally or from his tracheostomy tube. Because there had been a division of a number of his blood vessels during his radical neck dissection there was danger of rather sudden and massive hemorrhage from his carotid arteries.

4. Mr. K. *was comfortable*. When he became conscious he was placed in high Fowler's position. His neck was supported by and his head rested on a half-circle sponge rub-

ber cushioned collar. Like other patients who have had a cervical plexectomy as a routine accompaniment of their neck dissection Mr. K. experienced little *physical* pain. Hence, analgesia was kept at a minimum. This was helpful since this alert and interested patient had a much clearer tracheobronchial tree than does one who has had too much analgesia or sedation. Mr. K. did have *mental* pain. The mental anguish from not being able to speak was most disturbing to him. It would have been the height of imagination for the nurse to expect Mr. K. to *voice* his needs or objections he might have, to *mention* complaints of symptoms, to shout if his tracheostomy tube came out. This he could *not* do. Therefore, he was given a "magic" slate upon which he could write easily. Because he was so apprehensive he was given a hand bell to ring if he needed to do so. His bed was placed in such a position that he could see the nurses' station on the ward. His wife came and sat with him. This allayed his anxiety somewhat so that he had little difficulty in breathing and did not cough excessively which necessitated less suctioning of his tracheostomy tube.

5. Mr. K. had *adequate nourishment* including water and electrolytes since he could not eat or drink by mouth for a while. A Levine tube had been inserted by which he could be fed. He also received intravenous feedings. Care was taken to include such dietary elements which would not only supply his nutritional needs but would also prevent fecal impaction. He received exquisite nasal and mouth care. His mouth washes had been sterilized, given gently and pressure to his intraoral suture line was avoided. When he expectorated blood clots from his mouth he was told that this was nothing to worry about. His thirst was relieved by placing a small rubber sponge between his lips and gums. This sponge was moistened periodically with sweetened lemon juice. The patient squeezed the sponge at will with his lips. He enjoyed this very much since it helped him to swallow his saliva more easily.

6. Mr. K.'s *dressing* was *reinforced or changed* if necessary, that it remained in place with gentle pressure and that there was no pressure on the trachea. The nurse noticed that Mr. K. had some facial edema. Usually a patient whose dressing is too snug shows facial edema as well as some duskiness about the face. The latter would not be visible on Mr. K.'s skin. The nurse raised the head of the bed a little higher. The physician visited and effectively loosened the outside elastic covering of the dressing.

7. Mr. K. *did not have urinary retention.* When he was asked if he could urinate he insisted on getting out of bed to use the urinal. He was allowed to do so with assistance. (A few months later he told me that it took all his strength to get out of bed. He said: "My mammy always taught me not to *wet in the bed* so I just *can't wet in the bed.*") From this first day forward he was out of bed for most of the day either in his chair or walking around his room.

Mr. K. survived his first six post-operative days very well. He had begun to learn to care for his tracheostomy tube, and the skin surrounding it. He learned to cough just before aspirating this tube. He was taught to hold his tube securely in place with the thumb and forefinger of his right hand (he was left handed) while he suctioned the tube with his left hand. This prevented trauma to the tracheal mucosa. A light plastic neck encircling hook mirror helped him to see the opening of his tube. He was taught to breath easily and was encouraged when he accomplished this. In addition he was able to gently spray and suction his mouth and feed himself via his Levine tube. He was able to say a few words. In fact a very young student nurse, amazed at the recency of his surgery, recorded in the nurse's notes: "Mr. K. is quite independent, he *insists* that he can and does take care of himself, e.g., his tracheotomy tube, feeding, ambulating, etc." Too often we think we must be doing everything *for* the patient or we are not carrying out our objectives of comprehensive nursing care. Nothing could be farther from the truth. To help a *patient* to *help himself* to attain his optimum capacity as a dignified human being as soon as possible should be our goal.

On the seventh post-operative day Mr.

K.'s neck wound dehisced. It was somewhat infected and this delayed his progress. Naturally he became somewhat discouraged. He received frequent intramuscular injections containing antibiotics. To have his dressing done was quite an ordeal. A mild medication for pain was given one-half hour before the physician arrived to dress his wound by which one could look into and see the floor of the mouth. Fortunately the baseball games on television at that time of year were most interesting to him and this helped his morale somewhat. In four and one-half weeks his wound healed and, as Mr. K. said "all things got better together,"—his tracheostomy tube and Levine tube were removed, he was able to swallow a little food and preparations were made for him to go home. He was delighted to know that the public health visiting nurse who had visited his wife during her prenatal period would come in to see him, that she knew "all about his case" and would help him with his mouth care, and with any other teaching he needed. All of this was taken care of by referral by the physician, nurse and social worker. Plans were made for him to return to the Out-Patient Department for Speech Therapy and a periodic physical checkup.

When he first came home to his wife and children he was extremely happy. He was doing very well in his learning to talk. However, as time went on he did not seem to be gaining weight. (His recorded weight the day he left the hospital was 103 pounds.) He seemed to be "losing strength." The smaller children seemed to "get on his nerves." Life was beginning to be monotonous. Most of all he resented his diet of "baby foods." After all, he was eating essentially the same diet as was his relatively new baby. In fact, the baby was about to "graduate" to another level of food which was "above" her daddy's. These factors as well as having too much "time on his hands" and seeing his wife take over some of *his* responsibilities were beginning to put great "pressure on him." So, in a state of exasperation one evening he dressed himself and went "down the street." There, he met one of his old friends. Together they entered the local Tavern and sat down to have a "glass of whiskey and a few beers and to talk over old times." He said he thoroughly enjoyed himself. A few hours later he came out of the Tavern—looked up and saw the flashing light of a sign "Chinese Restaurant." He was "starved." He "loved chop suey." He entered and asked for an order of beef chop suey "to go." As he walked toward home in the chill night air he felt the warmth of the chop suey in his bundle which he clutched tightly in his arm. He began to realize he couldn't eat this. It was not according "to his diet." On entering his home he called to his wife who had retired. She was a little irked and had "given up waiting" for him. He told her he couldn't eat what he had ordered and asked if she would. She did not acquiesce. The aroma of the food and his dire hunger motivated him to sit down and eat the food which he took into his mouth with a fork. Then he took his index finger and pushed all the food over to the "good side" of his tongue and mouth. He held it there. He used his "gums and half tongue to chop" and churn the food which he swallowed. He later learned that the foods he could tolerate best were: wheatena, not corn flakes or oatmeal, ground beef, slivered roast chicken, whiting, raw eggs beat up with salt and pepper, saltine crackers and malted milk, small boiled sliced potatoes, and mashed green and yellow cooked vegetables. It was amazing that he knew so much about adequate nutrition. Upon investigation it became clear that his wife had taught him. She had learned when she was a "continuing" student at the Mothers' Club classes at the prenatal clinic at the local Public Health Unit in her neighborhood. He became so interested that he began to help her with the family meals. (Sometimes nurses do not realize the ramifications of good teaching.)

Since the evening when Mr. K. visited the Chinese Restaurant he has been eating extremely well by using his own "experiment." While this might not have been too acceptable from an aesthetic viewpoint nevertheless Mr. K. believed this procedure was basic to his survival. In two months he had gained twenty-four pounds. He looked better and felt better. He said he could taste everything.

His cigarettes were "delicious."

Mr. K. will continue with his Speech Therapy and will be encouraged to go back to work within a month according to the physician's suggestion. For how long nobody knows. His prognosis is questionable at this time. However, he must be followed up with a most optimistic attitude—never once should he feel that there is nothing more that can be done for him if his disease returns. He must be given something to fasten his faith on—he *has* something to live *for—himself,* his wife, his children. He must be helped to continue with a very *hopeful* attitude, not to bemoan the fact that he has lost an important part of him that all the world can see. A nurse might help to ignite in him the spark which lights the fire of his ambition so that he may make the most of what he has left for, after all, it's what he has *left* that *really* counts. This I have tried to do for him.

The following is an anonymous poem. I invite your attention to it since it was very helpful to Mr. K. during one of his periods of discouragement. It may help you, too, someday when you care for a patient who has incurable cancer and you may be very discouraged.

126 Newbury St.,
Boston 16, Mass.

FORGIVE ME WHEN I WHINE

Today upon a bus, I saw
A lovely maid with golden hair;
I envied her—she seemed so gay—
And oh, I wished I were so fair,
When suddenly she rose to leave,
I saw her hobble down the aisle;
She had one foot and wore a crutch,
But as she passed, a smile.
Oh, God, forgive me when I whine:
I have two feet—the world is mine.
And when I stopped to buy some sweets,
The lad who served me had such charm.
He seemed to radiate good cheer.
His manner was so kind and warm.
I said, "It's nice to deal with you,
Such courtesy I seldom find."
He turned and said, "Oh thank you Sir."
And then I saw that he was blind.
Oh God, forgive me when I whine;
I have two eyes—the world is mine.
Then, when walking down the street
I saw a child with eyes of blue.
He stood and watched the others play;
It seemed he knew not what to do.
I stopped a moment, then I said,
"Why don't you join the others dear?"
He looked ahead without a word,
And then I knew; he could not hear.
Oh God, forgive me when I whine;
I have two ears—the world is mine.
With feet to take me where I'd go,
With eyes to see the sunset's glow,
With ears to hear what I would know;
I'm blessed indeed. The world is mine;
Oh God, forgive me when I whine!

Anonymous

EDITORIALS

Heat Injury Prevention

WHILE we are sweltering with the heat is a good time to talk about the prevention of heat injuries. The majority of such injuries can be prevented if a little thought is given to the matter. Too frequently we suffer from the lack of such consideration. So as an individual not in the ranks we have no one to blame but ourselves.

However, in the case of military formations the individual has little choice to act in his own behalf. The responsibility rests on the commanding officers in charge of these individuals. They must at all times be aware of the serious consequences that may result from the neglect of a few rather elementary rules. The matter of heat injury prevention is a matter of education.

A recent Army Circular (40-36, May 4, 1959) emphasized some points:

1. Basic trainees are especially susceptible to heat injury during their first month of training.

2. Immunization should be scheduled so any reactions occur during non-training periods.

3. Type of clothing and manner of wearing has a marked influence.

4. There must be adequate water intake.

5. General environment is to be considered —presence of epidemics, state of weather, physical condition of troops.

6. Advantage is to be taken of shaded areas during rest periods and instruction periods.

7. Early recognition of a case of impending heat injury and positive action in initiating treatment.

Let us keep in mind that heat can do harm —that great friend of ours, the sun, can also injure us.

Neurosurgery in World War II*

THE first of the two neurosurgical volumes in the series dealing with the history of the U. S. Army Medical Department in World War II concerns two subjects, the administrative aspects of neurosurgery and the management of head injuries. Conscientiously edited and partly written by two experienced neurosurgeons, with other chapters by 12 other equally experienced contributors, this book is an amazing repository of detailed administrative information and clinical data covering a broad range of subjects. It includes not only the immediate problems of craniocerebral injuries but also their important sequelae.

Obviously, a single book, no matter how detailed, could not cover all that is to be said concerning neurosurgery in the various theaters of World War II. The wonder is that within its 466 pages this book has included so much so succinctly. The administrative problems of the Zone of Interior and the European Theater are delineated in detail. The untimely death of Dr. Eldridge H. Campbell, who was preparing the section on the Mediterranean Theater, has made that administrative section disproportionately brief and incomplete.

* Medical Department, United States Army. Surgery in World War II. Neurosurgery, Volume I. Prepared and published under the direction of Major General S. B. Hays, The Surgeon General, United States Army. Editor-in-Chief, Colonel John Boyd Coates, Jr., MC. Editors for Neurosurgery, R. Glen Spurling, M.D., and Barnes Woodhall, M.D. Associate Editor, Elizabeth M. McFetridge, M.A. 466 pages, illustrated. U.S. Government Printing Office, Washington, D.C. 1958. $5.00.

Clinically, the point is repeatedly made that the early care of a casualty with a craniocerebral injury must be his final care. Incomplete surgical measures are not justified in any emergency. Better to bandage the head securely and evacuate the patient to an installation in which he can receive total care. Early in the war it became clear that a patient with a brain injury—if the injury were not intrinsically lethal—could safely wait for 48 or 72 hours or even longer for definitive surgical care if he received proper supportive care in the interval.

One of the positive neurosurgical lessons of the war was that delayed debridement and redebridement were both lifesaving and surgically logical. After 1944, when penicillin became generally available, all wounds healed better, but it is not reasonable to attribute all the improvement to penicillin. Better and bolder surgical techniques and the liberal use of whole blood were more important, and they remain more important. Neither penicillin nor any other antibiotic has ever taken the place of surgical judgment and a clean wound.

There were times when, due to the shortage of beds and the great influx of seriously wounded casualties, some patients had to be put on hospital ships headed for home in spite of the bone chips and other debris in their wounds. Some of them had cerebritis, ventriculitis, cerebral fungi, and even cerebral abscesses. When they arrived in the Zone of Interior, their state must have caused the neurosurgeons here to conclude that overseas all was confusion and incompetence. As he read this book, this writer recalled a number of such unhappy situations. They were never condoned; they were always recognized as wrong. As the war progressed, both administrative and professional management improved, and by the time it ended, as was true in Korea, early, definitive care of head injuries was extremely efficient.

Since the Age of Reason has not yet come to pass in the world as far as international relations are concerned, it seems proper to stay braced for a possible repeat exercise in military medicine. Military medicine, per se, of course does not differ from civilian medicine except in two respects, that it has a major administrative component and that both administrative and professional staffs must work under mobile and emergency conditions. Until the era of peace and love between nations comes to pass—and it seems nowhere near at hand—*professional staffs and medical equipment must be kept at full efficiency pitch.* This book is heartily recommended to those who have the accomplishment of this task in their hands.

It is an impressive feature of NEUROSURGERY, VOLUME I, and a decided tribute to its editors and authors, that the reader receives from it two clearcut pictures. One is the superb care which casualties with craniocerebral injuries received and the excellent end-results which were achieved. The other is the picture of error, administrative bungling, unnecessary frustrations, and poor clinical judgment. Never again should certain things happen. In North Africa in 1942, for instance, the only steam sterilizers in certain installations—perhaps in all—were marked 1917 and functioned accordingly. Tables of organization were, in effect, Sacred Cows, fixed, immutable, and utterly frustrating to the consultants whose recommendations were acted upon in weeks rather than within the 12-hour period in which a single neurosurgeon was overwhelmed with neurosurgical casualties. Never again should the Armed Forces be caught short-handed professionally in respect to neurosurgeons, as well as other specialists, as they were in World War II. Once the difficulties had been ironed out, the high-pressure training courses were admirably administered and more than fulfilled their purposes, but it was almost too little too late, and some of those who were thus trained necessarily had many neurosurgical limitations.

Anyone who had personal medicomilitary experience in the terrible years of 1941 to 1945 can read between the lines of this frankly written book and remember how unpreparedness, poor administration, and

rule-ridden supply depots can adversely affect the care of the wounded. The civilian physician, suddenly put into uniform, often lacked a sympathetic understanding of the need for him to learn map reading, participate in training marches, and attend retreat ceremonies when he had entered the service to care for wounded men and he saw how little time there was to lose.

Some lessons are finally learned, however, albeit slowly and painfully. After the war, residency training programs were developed in the various military hospitals of the country, though it was not until 1953 that a neurosurgical residency training program was set up in Army hospitals.

This book forces one to raise certain questions. *How well are we prepared today from the standpoint of neurosurgery?* Are we making service attractive enough for competent young neurosurgeons to remain in uniform once their required service is ended? The accounts of delays in assignment, of shortages in personnel, and of the misuse of specialized personnel set forth in this book—which undoubtedly could have been expanded had all the neurosurgeons in service had their say—should be a standing warning that *in time of peace, the medical departments of the Department of Defense can scarcely be too well prepared for war.*

There were also shortages and inadequacies of equipment in World War II. What is the situation today? Are complete, modern, first-class neurosurgical kits available? Are they available in sufficient quantity? Could adequately equipped medical forces be mobilized by the military if mass casualties occurred simultaneously in many parts of the country? In short, how much frantic scrambling would there be, come that dreadful day, in spite of all the well-intentioned courses given periodically in peacetime with an eye to a new, more horrible, war, full of many unknown problems?

There are other things to be read between the lines of this book: the surgeon, dog-tired after days of massive neurosurgery; the equally weary nurse, plodding to her ward in cold and heat, in dust or rain, to care for terribly wounded patients; and the corpsmen, for whose loyalty and service there cannot be too much praise, for they were the backbone of the neurosurgical wards as of all the other wards. Those who were in service do not need these things to be set down in print, for a casual word or phrase brings them to mind.

This rich volume has much to say, says it well, and makes clear the lessons to be learned, both in plain words and by implication. There were errors made in World War II which should never be made again. They will not be if the lessons of this frankly and fairly written book are well learned.

One other question does, however, arise. This is an account of neurosurgery in the Army Medical Corps. Why could it not also have been an account of neurosurgery in the Navy and the Air Forces? Why must schisms be carried over into medicine, when it would have been so useful and so effective to pool all the wartime information? Administrative and clinical problems were of the same order in all the services. Human errors were not confined to the Army, and it would have been profitable to know them all.

No matter, however, under what circumstances medicine is practised, sound clinical principles, experienced hands, physical stamina, courage, and a humble heart are the total equipment of the physician, and those things this book sets forth most admirably, particularly as they concern neurosurgery.

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Around the World

(Ser. III, No. 9)

By
CLAUDIUS F. MAYER, M.D.

IRAN produced about a thousand tons of *opium* a year before October 1955; about 90 tons of the product were exported. According to a rough estimate, one of every ten Iranians was an opium addict although perhaps considerably fewer were truly enslaved by the drug. In 1955, the Anti-Opium Law banned the further production of opium, and restricted its importation. Many of the former opium smokers came voluntarily for treatment of their drug habit. With the aid of methadone, the intake was reduced rapidly in one to three weeks. Poppy is not cultivated any longer, and the number of addicts was reduced by more than 80%. Soon, opium smoking will be completely eradicated in Iran.

It was probably the first time anywhere in the world that the staff of a city police force was enlarged with a woman surgeon appointed for the special purpose of examining, when required, any women and children seen by the police. This happened in 1927 to the *Manchester City Police* in Great Britain. The woman surgeon, after 27 years of work (1927-1954), retired, and she recently described her experiences on *"sexual offences as seen by a woman Police surgeon."* Though British sex life, or at least some aspects of it, were brought to light by the Wolfenden Report, sexual misbehavior is much more widely spread all around us, as the surgeon's experiences show. Without discussing the report's details, we may look at the statistical figures as an objective evidence of the *great demoralization of our society* which followed the Second World War. Many of the cases were indecent assault, involving girls seven years of age and mentally backward older persons. The latter should be confined at a place other than prison since jail will not prevent further trouble arising.

According to a recent study of the *Italian Central Institute of Statistics,* diseases of the circulatory system are the most common ailments in Italy. There are 467,000 Italians who have cardiovascular system trouble. A group of 362,000 persons have digestive troubles. Neuroses were reported in 157,000 Italians. Among the invalids, 383,000 were suffering from diseases affecting the limbs; 133,000 from mental and nervous diseases; 59,000 persons cannot see, and 45,000 are unable to hear.

In 1955, the government of England appointed the *Willink Committee* to report on the number of *medical practitioners needed in the near decades* and on the need to readjust the intake of medical students. It was the Committee's finding (as reported recently) that the medical schools of the United Kingdom annually produce 1,855 graduates, and that this number should be cut by about 10% from 1962 on until 1970 since the graduates constitute a surplus of physicians for Great Britain. The Committee also recommended that the present full-time university teaching and research staff, comprising 1,200 persons, should not increase by more than 1% a year. Everyone hopes that this last advice will remain just another unheeded recommendation.

Somewhat similar is the doctor supply in *Sweden.* Around 1950, that country had a shortage of physicians, which brought the Swedish government to the point that it allowed the *immigration of Austrian physicians* in a large number. In that year, the total number of doctors in Sweden was about 5,000. Last year this number reached 6,500. Now, the Swedish Medical Society is fearing the rapid increase which may soon boost the medical profession up to 15,000 while the country does not require more than 9,000

doctors. Thus, the Society believes that immigration of additional foreign doctors into Sweden is not desirable. (And this at the beginning of the International Refugee Year!)

It has been an old belief that *the older a primipara mother is* the more likely her baby is to have some abnormality of development. A group of *Swedish scholars* recently found a statistical confirmation of the old belief. At Stockholm and Uppsala, 1,030 mothers were 42 years of age or older during a certain period. They gave birth to 1,041 infants; among the babies, 5.1% had some developmental defect though the total rate of congenital abnormalities for all deliveries of the observation period did not exceed 1.5%. Mongolism was rather frequent (21.1%).

During the Second World War, France, Holland and the Scandinavian countries suffered most from *malnutrition.* From the animal biology it is well known that the litter size of many mammals is decreased by undernutrition. Statistics of these countries show that this is also true for human births. The rate of *dizygotic twinning sharply decreased* during the war years, especially in Holland in 1944-45. The monozygotic rate however remained steady.

Some people are very "touchy" any time that race is mentioned. But, to the French people at least, there is no doubt that there are many physiological and pathological differences between races. The proof of *racial differences* is a very slow and protracted procedure of biological and biometrical measurements. In *Marseille, one hundred Negro soldiers* were studied in 1955. The various findings of this study were published (by George Heuse) in a book entitled "The Biology of the Negro" (Bruxelles, 1957). This is a very clearly written work which shows the recent advancements of differential racial anthropology. The work proves the old observation that everyone is developing under the influence of two factors: one is his own hereditary patrimony, the other is the environment which includes many things such as climate, nurture, and all kinds of influence, not excluding the contaminations and the social contacts. What is true for an individual is also true for groups of individuals, for peoples. And, in this respect, Nature has put the African in a situation which the European of today is hardly able to understand. The *tropical environment* favors a number of endemic diseases, mostly the parasitic affections. On the other hand, the soil, impoverished by the intense mismanagement, does not yield sufficient food; e.g., the calcium level of the soil is especially low. Thus, it happens that in the majority of African peoples good health is exceptional, and it is difficult to know in what degree a physiological peculiarity should be considered normal or pathological. Biochemistry cannot separate the Negro from the White, except for the low calcium level. Nevertheless, the Negro organism is accustomed to such a deficiency, and hence the calcium elimination is also low in these people; for this reason, says the investigator, rickets among the Africans is practically unknown. Similar difference seems to exist in the liver function of the Negro, which is permanently insufficient. The Negro's respiratory rate is somewhat quicker, but his heart rate is generally slower. He is inclined to vagotonia. The reflexes have a high threshold in the Negro, and the reaction times are prolonged.

Industrial medicine in France is a part of the vast program of social medicine. The law requires that each worker who is exposed to professional hazards should have an annual physical examination. The young workers between 14 and 18 years of age must have four such examinations yearly. This legal control requires a large administrative setup, and the use of many industrial physicians (there are 1,000 full-time factory doctors, and a great number of those who do the examinations part time). Instruction in industrial medicine started in 1935 at Lyon, Paris, and Lille. The first university chairs were created in 1947 for this discipline. Since 1958, the industrial physician needs to have a special board certificate. In-

dustrial medicine is excellently organized at the large industrial plants and enterprises such as the Renault works, the Nuclear Study Center at Saclay, the institution of the French coal miners at Douai. For research studies in work physiology the Strasbourg University is the only one equipped. There is also a special hospital in Paris for the cases of industrial poisoning.

A member of the Parapsychological Center of Bologna witnessed the *ceremony of "fire dance"* or "fire walk" which a group of shy people, descendants of the inhabitants of an ancient village of Thracia, are still practicing *in present Greece and Macedonia.* The strange custom of *"pyrobasia"* of the "suspirers" (*anastenarides*) is a commemoration of the event in the 13th century when the ancient church of St. Helena burnt down in the village of Kosti, and the inhabitants rushed into the burning church to rescue eight icons of the church. Participants in the fire-walk actually are but for a brief time in contact with the hot embers. A pyrometer registered only 190°C during the peak of the fire-walk. The length of walk did not last more than 3-4 seconds. The bare feet of one of the fire-walkers was examined after his performance; on the left foot, there was a red zone, with some vesicles in the center; the right foot was without any lesion. At St. Helena village, the fiery "sidewalk" is about 5-6 paces long. One of the fire-walkers was a woman who passed the entire length without injury to her feet. The heat of the fire was about 400°C. The phenomenon of pyrobasia and of "salamander" people has a large literature but no satisfactory explanation has been offered so far (Leidenfrost phenomenon?). Thus, pyrobasia must remain among the unexplained phenomena of parapsychology, together with extrasensory perception, levitation, radiesthesia, and poltergeist. . . .

At the New Delhi meeting of the Red Cross, Masutaro Inue, Director of the foreign affairs of the Japanese Red Cross, outlined the possible action that the *Red Cross could take in a nuclear war.* Though the Red Cross ardently hopes that it will never come to another nuclear cataclysm, the various national societies and the international organization of the Red Cross must be prepared to deal with a nuclear disaster, especially in reference to the protection of civilians. The chief duties of the Red Cross at the present time are these: (1) The Red Cross must establish and train a corps of specialized medical personnel; (2) a method of treatment or of physical and physiological prevention must be discovered; (3) relief action must be coordinated in case of a limited atomic war; and (4) preparations must be made on a world scale.

After April 21, 1960, Brazil will have a *new Federal capital;* it will be called *"Brasilia."* Its creation is the fulfillment of a pledge of President Kubitschek who wished to push his country 50 years ahead during his five-year term of presidency. Rio, the capital since 1763, will then be left a city of cosmopolitanism and tropical brilliance. *Brasilia,* the new city, will be 1,000 miles inland at a site which had been recommended since 1891, near the point where the river basins of São Francisco, the Amazon and the Rio Da Prata meet. In 1894, the Cruls Mission, composed of military men, geographers, physicians, botanists and engineers, made a minute study of this area which is about 6,000 square kilometers in size. The master plan of the city-planning NOVACAP company includes many features for assuring the sanitation and health of the new city. Now, *Brasilia* is still a "nucleus" with a chapel and a few barracks, and lots of signs for future streets, avenues, and lots for . . . dreams.

Ecuadorians are worried about the *mortality of infants* which is at an extremely high rate in their country. It amounts to 115.8 deaths among 1,000 live-born babies, a figure which is exceeded by the Chilean figure only (123.8 per M). In fact, several *other Latin American countries* have high rates of infantile mortality, including Colombia (102.7), Costa Rica (101.2), Guatemala (87.9), El Salvador (81.5), Mexico (80.5),

Nicaragua (74.5), Dominica (68.3), Venezuela (68.0), Argentina (61.9), Honduras (60.0) and Puerto Rico (57.3). (Note: In the U.S., this rate was 26.6 per M in 1954.) Statisticians in Ecuador believe that this high mortality is actually still higher because of the regional statistical peculiarities of counting the births and deaths. Accurate estimation of the causes of such a high infant mortality is impossible because only a fourth of the deaths have medical certifications (or even less in the rural areas).

A member of the Surgical Clinic of the Dakar Medical School, after his two-year sojourn in the capital of West French Africa, made a comparison between the *practice of gynecology* in Paris and at *Dakar*. In the French metropolis, gynecology has almost become a branch of endocrinology, while in Dakar the first patients whom a gynecologist will meet are women with huge fibromyomas, enormous ovarian cysts, ulcerated cancer of the breast or of the uterine cervix, with much infiltration and with established vesico-vaginal fistulas. The female patients in Dakar speak various languages, and the taking of their history is very difficult. Often, the interpreter is poorly informed, and much of the diagnosis must be made by bimanual palpation. Many of the women patients are also suffering from chronic protein deficiency which requires a long dietetic treatment before a metabolic balance can be established. Mononucleosis, anemia, and eosinophilia are also frequently found. The patients also have a tendency to hemorrhagic diathesis, which makes even a simple laparotomy a risky intervention without preoperative treatment with K vitamin and F vitamin. Many of the female patients also show changes in their liver or in the myocardium, which are ascribed to nutritional deficiencies. All this contributes to the difficulties which the gynecological surgeon has to face in Dakar.

What may be the pathological effect of African life upon people who had migrated there from Asia? A physician of *Durban* found that *diabetes* is an exceptionally common disease in the settlement of Hindus under the subtropical climate of *Natal*, while it is relatively rare among the native Bantu population. The diabetes shows certain peculiarities which can be ascribed to the difference in climate. The juvenile form of diabetes, characterized by insulin resistance and freedom from ketosis, is very common, while the insulin sensitive cases, or those liable to ketosis, are infrequent. The elderly patients, beyond 40 years of age, are usually underweight. Infections and vascular complications are often met with. The observations of diabetes in Natal remind us of the studies of diabetes in Jamaica made a few years ago with similar results. Among the Europeans in Natal, diabetes is just the same as in the white race elsewhere. In the native Bantus, *ketosis in diabetes* is not unusual. One wonders whether the large variety of herbs, which both the Hindus and the Jamaicans consume as food or as flavoring, could cause diabetes by interfering with the carbohydrate and the lipid metabolism.

The *insulin requirement of diabetic patients* is very variable. From the *Singapore General Hospital* it has been reported that some of the diabetic patients needed an extreme number of units of insulin. There is, for instance, a 52-year old Malayan taxi driver whose glycosuria could only be controlled with 720 units of insulin. A 46-year old Ceylonese jeweler required 360 units daily, and a 16-year old Franco-Pakistani girl required 400 units of insulin daily at one period of her treatment.

Smallpox in West Bengal was at its peak in 1957/58. With the rather defective system of collecting the statistics of morbidity and mortality in this Hindu country, it was found that 18,612 individuals were attacked by smallpox in 1957, and 10,095 of them died. The figures also include the cases in Calcutta. The *difficulties of medical surveying* of the pox situation are due to the popular tendency to conceal the infection. Birth registration is defective by about 50% and death registration by 42%. The responsibility for *collecting vital statistical data in the*

rural areas of West Bengal lies with the village *"chowkidar,"* a part-time worker who is *not* under the administrative health authority of the State. He is also responsible for collecting epidemiological facts. In the urban areas, the collection of morbidity data is in the hand of guardians, householders, etc., and the system is no better. Hence, no prompt intelligence service exists in the field of epidemiology. Public health authorities thus will learn about an epidemic outbreak 4-6 weeks after it has already started. The chowkidar gets his information from the householder who, on the other hand, is superstitious and conceals the cases. A very common belief is that a smallpox patient would not survive if any outsider would look at him. The chowkidar himself is slow in transmitting information to the health outposts. Thus, outbreaks in epidemics are *deficient in registration.* Moreover, with the exception of Calcutta, the causes of death are recorded by laymen, and they are seldom verified. Some help would be if the disposal of cadavers at unauthorized places (i.e., elsewhere than at official burning *"ghats"* and burial grounds) would not be permitted. On the other hand, superstitions and prejudices die very hard.

In Bombay, the *Haffkine Institute* reached its diamond jubilee this year. Since its beginning, it was the producer of plague vaccine, and of other immunizing products against other pandemic diseases. It has also been carrying out fundamental research in microbiology. Now, it has grown into an international research center where hundreds of scholars are working on problems of curative and preventive medicine and general sanitation. In addition to the manufacture of immune sera, vaccines, antivenoms, drugs and synthetic chemicals, it is also a training place of research workers, and a diagnostic center for the recognition of many infectious diseases. Its pharmacological section devotes some time to the study of indigenous medicinal plants. Originally set up as a Plague Research Laboratory on August 10, 1899 by the Bombay Government, the institute assumed its present name in 1925 in recognition of the great humanitarian services of Dr. Haffkine to India and to the Indian people.

For the *alleviation of India's population problem,* the Government of Madras instituted a special scheme for the *sterilization of certain men and women,* men after 32 years of age and woman after 26 years of age, who had not less than three living children. Two surgical teams were set up in the Madras hospitals to perform either vasectomy or salpingectomy. The Government also promised to give 15 rupees to male government employees and 25 rupees to the female employees as a subsidy for the operation. Canvassers and tutors in family planning will also get special remunerations from the Indian Government.

Endemic goiter is so frequent in *Bosnia and Herzegovina* that every fifth man and every third woman has a swelling of the neck. Medical statisticians also found that, probably due to the difference in their standard of living, Roman Catholics are less frequently found among the goitrous people than Orthodox Serbians and Moslems. Geographically, the largest number of goiter cases are found in the districts of Sarajevo, Trebinje, Brcko, Banja Luka, and in the valleys of the Drina and Sava rivers. Since 1952, Jugoslavians must use iodized salts.

In recognition of the world-wide spread of virus diseases, the *Hungarian* Ministry of Health decided that all national facilities for virus research should be enlarged. The Virological Department of the National Institute of Health as well as the *virological branches* of the microbiological institutes of the universities will receive the necessary equipment for research.

In *England, a husband,* aged 27, radiotechnician by occupation, received a *suspended sentence* because, at his wife's insistence, he did not call a midwife but attended and *managed the delivery himself.* According to Section 9 of the 1951 Midwives Act, this is an "offence" in Great Britain. Nobody

would have known about it but for the fact that the husband had to register the birth in order to get maternity allowance for his wife. (Maybe he thought that he is obliged to finish what he had originally started. . . .)

American research again produced a *new term* for the keenly observed clinical symptom complex in which gastrointestinal ulceration is associated with gastric hypersecretion and tumors of the pancreas. This complex was described in 1955, and, after its describers, it is called the *Zollinger-Ellison syndrome.* A British physician (J. F. Stokes) who had an opportunity to observe the work at the Massachusetts General Hospital, was however puzzled by the zeal of American residents in acquiring medical knowledge and spending *little time on general education.* "Perhaps if all (medical) journals agreed to stop publication for six months every five years"—he states—"it might give everyone time for reflection and time to decide whether there is room for both pointillisme and polysaccharides, and coproporphyrines as well as Copernicus, and whether Emile Zola's realism and the Zollinger-Ellison syndrome are mutually exclusive phenomena." . . . *Multa paucis!*

SMOKING AND LUNG CANCER

If you are one of those who has been convinced that there is a causal connection between smoking and lung cancer you should read "Smoking—The Cancer Controversy."*

Sir Ronald Fisher, the author, is a man of many honors and many degrees; a statistician, by the way, who refutes the statistics which have been presented to convince us of that causal relationship.

States Sir Ronald: "My claim . . . is rather that excessive confidence that the solution has already been found is the main obstacle in the way of such more penetrating research as might eliminate some of them" (*possibilities*—italics ours).

This interesting little book will keep alive the controversy about the cause of lung cancer.

*SMOKING: THE CANCER CONTROVERSY. By Sir Ronald Fisher. Oliver & Boyd Ltd., Edinburgh. Price 2s.6d.

NOTES

Timely items of general interest are accepted for these columns. Deadline is 1st day of month preceding month of issue.

Department of Defense

Ass't Secretary (Health & Medical)—HON. FRANK B. BERRY, M.D.
Deputy Ass't Sec'y—HON. EDW. H. CUSHING, M.D.

SELECTIVE SERVICE

The Department of Defense has requested the Selective Service System to provide Armed Forces Induction Stations with 8,000 men during July 1959 for assignment to the Army.

MEDICARE

Increased appropriation which will be more in line with its needs appears probable for the fiscal year 1959-1960. Brig. General Floyd Wergeland, Executive Director, Office for Dependent's Care, urged the $88.8 million figure in the budget. It appears that Congress is favorable.

The budget for the past year, $72 million, has been found to be insufficient to carry on the extensive medical program for the dependents of service personnel.

SCIENTIFIC DIRECTOR AT AFIP

Dr. Robert E. Stowell has been appointed Scientific Director of the Armed Forces Institute of Pathology, Washington, D.C., to succeed Dr. Ernest W. Goodpasture who resigned in April.

Dr. Stowell who is a native of Cashmere, Washington, received his M.D. degree from Stanford University in 1940. In 1944 he received his Ph.D. degree from Washington University, St. Louis, Mo.

AFIP

ROBERT E. STOWELL, M.D.

For the past eleven years he was Professor and Chairman of the Department of Pathology and Oncology and the Director of Cancer Research, University of Kansas Medical Center, Kansas City, Kansas.

EPIDEMIOLOGICAL BOARD SECRETARY

Captain Robert W. Babione, MC, U. S. Navy, was relieved of his duties as Executive Secretary of the Armed Forces Epidemiological Board on his retirement from the Navy on June 30. He has held this position since April 28, 1955. Tribute was paid to Captain Babione by the President of the Board for the commendable service rendered.

Dr. Babione will be succeeded by Colonel John Rizzolo, USAF (MC), the first Air Force officer to assume this position of Executive Secretary.

AWARDED LEGION OF MERIT

Vernie A. Stembridge, M.D., who was on duty at the Armed Forces Institute of Pathology from February 11, 1956 to January 15, 1959 in the rank of major U. S. Air Force Medical Service, was recently presented with the Legion of Merit by Colonel Frank M. Townsend, USAF(MC), Deputy Director of the Institute.

Dr. Stembridge, now Associate Professor of Pathology at Southwestern Medical School in Dallas, Texas, was cited for his professional ability and for establishing a close working relationship with the three countries (Great Britain, Canada, and the United States) which comprise the Joint Committee on Aviation Pathology. His presentations at international meetings of the Committee won him wide recognition as one of the leading experts in the field of aviation pathology.

MEDICAL ASPECTS OF MISSILE OPERATION COURSE

A ten-day Medical Aspects of Missile Operation course has been established at Cape Canaveral, Patrick Air Force Base, Florida, for the three military services. Five courses will be held each fiscal year with 25 students from the military services attending each course.

The Air Force Medical Service has been designated the responsible agency by the Assistant Secretary of Defense (Health and Medical) for the training of the personnel of the three services in the field of medical and occupational health problems occurring in missile launching operations.

PUBLICATION AVAILABLE

The Unknowns of World War II and Korea is a 70-page booklet which records in words and pictures the ceremonies in connection with the final rites at Arlington National Cemetery on Memorial Day 1958.

Copies of this booklet may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. Remittance should be made in check or money order (no stamps).

Army

Surgeon General—MAJ. GEN. LEONARD D. HEATON

Deputy Surgeon General—BRIG. GEN. THOMAS J. HARTFORD

HONORED

Brig. General Stanhope Bayne-Jones, U. S. Army, Reserve, Retired, was presented with the Passano Foundation Award for 1959 at Atlantic City, New Jersey, June 10, during the annual convention of the American Medical Association.

The Award which consists of $5,000 was given in recognition of a long and extraordinary service to science and medicine, as an educator and administrator in tasks of the highest importance.

This is the 15th award presented by the Passano Foundation since it was established in 1943; it is sustained by annual contribution from the Williams & Wilkins Company, Baltimore.

Dr. Bayne-Jones, a graduate of Yale (A.B.-1910) and Johns Hopkins University (M.D.-1914), served with the British and American armies in Europe during World War I; during World War II he was Deputy Chief of the Preventive Medicine Service in the Office of the Surgeon General of the Army. From 1935-1940 he was Dean of the School of Medicine, Yale University. Since his retirement he has been making his home at 2330 Massachusetts Ave., N.W., Washington 8, D.C.

COMMANDS WRAMC

Brig. General Clement F. St. John, MC, has been named to command the Walter Reed Army Medical Center, effective July 15. His previous assignment was that of Commanding General, Brooke Army Hospital, Fort Sam Houston, Texas.

General St. John, a native of Ohio, received his medical degree from Ohio State

University School of Medicine in 1928, and then entered on active military duty with the Army Medical Corps.

PROMOTED

Brigadier General A. L. Tynes, Commanding Officer of Letterman Army Hospital, San Francisco, California, was promoted to that rank on May 28.

General Tynes is a graduate of Hampden Sydney College (1926) and received his medical degree from the University of Virginia in 1930. Following his graduation he entered the Medical Corps of the Army where he completed his internship as a Reserve Officer and was then commissioned in the Regular Army. He has held many important positions in the military service and has had much to do with the planning of new hospitals for the Army. An assignment in the Office of the Surgeon General in this connection was that of Chief of the Medical Plans and Operations Division.

STUDIES MEDICAL TRAINING METHODS

Colonel Timothy M. R. Ahern, Royal Army Medical Corps, has been assigned to Brooke Army Medical Center, Fort Sam Houston, Texas as an exchange officer to study U. S. Army medical training methods, equipment and hospitalization procedures. His assignment is for one year.

U. S. Army Photo

MAJ. GEN. WILLIAM E. SHAMBORA (right), Commanding General of Brooke Army Medical Center, welcomes COLONEL TIMOTHY M. R. AHERN, RAMC.

DIRECTOR MEDICAL RESEARCH ACC

Lieutenant Colonel Douglas Lindsey, MC, U. S. Army, has been assigned as Director of Medical Research of the Chemical Warfare Laboratories at the Army Chemical Center, Maryland. He succeeds Colonel Albert R. Dreisbach who has been assigned to command the Patterson Army Hospital, Fort Monmouth, New Jersey.

Colonel Lindsey, a graduate of Louisiana State University and Yale (M.D.—1943) has received a masters and doctorate in public health, both from Yale. He is a graduate of the Army Command and General Staff College and of the Air University.

His decorations include the Silver Star with Oak Leaf Cluster, the Bronze Star, the Purple Heart, the Masters Parachute Badge, and the Glider Badge.

DENTAL DEMONSTRATIONS

The recent State Dental Association meeting in Seattle, Washington, gave dental officers at Fort Lawton an opportunity to demonstrate some of their work.

On a table Captains John G. Griffith and Robert Everhart, staff members of the Fort Lawton Dental Clinic demonstrated crown restorations and the fabrication of acrylic jacket crowns to some of the 2,000 dentists and their guests that were present.

U. S. Army Photo

CAPTAIN ROBERT J. EVERHART, chief of prosthetics at the U. S. Army Hospital, Ft. Lawton, Wash., discusses his demonstration on crown restorations.

The military dental services can boast of some of the latest equipment and methods used. Military dentists have made many important contributions to the field of dentistry.

MONKEY BUSINESS

Able and *Baker,* questionable relatives to homo sapiens, were reported to have had no ill effects from their 10,000 mile an hour ride over the 1700-mile stretch in the Army's Jupiter IRBM during the latter part of May. They were recovered safely from the nose cone when it returned to earth and struck the water near Antigua, Virgin Islands.

If monkeys could only talk we might learn more of this trip although we are sure much important data were collected and will be released in the future. Apparently the monkeys did not even need a tranquilizer when their more sensitive cousins recovered them.

The death of *Able* four days after the flight must properly be recorded as an anesthetic death and not due to any incident of the flight. Surgeons were in the process of removing an electrode from the leg when *Able* died.

MALE DIETITIANS

The Army recently appointed two male dietitians, First Lieutenant James E. Johnson and Second Lieutenant Kenneth E. Larsen. This is a break-through into the ranks of the women for previously only the ladies were considered to be competent to plan the meals for the men and women of the Army. But times have changed. Or have they? We remember when the men had to do this for themselves in the Army. But we do admit that the ladies made some distinct improvements in our menus. From the boiled potatoes and molasses and bread of World War I we sat down to some mighty good meals in World War II. But who was responsible for all those beets?!

But to get back to male dietitians—we learn that there are 53 of them in the category of "registered" in the United States.

Lieutenants Johnson and Larsen were assigned to Brooke Army Medical Center, Fort Sam Houston, Texas, for training.

U. S. Army Photo

2ND LT. K. E. LARSON (left); 1ST LT. J. E. JOHNSON; and 1ST LT. BARBARA RUSHING.

IDENTICAL-TWIN PHYSICIANS RECEIVE ARMY COMMISSIONS

The Army Medical Service got two-for-one recently when Drs. Peter and Ward Starrett, identical twins, were simultaneously commissioned First Lieutenants in the Army Medical Reserve at the Reserve Training Center, Aurora, Illinois.

The twins, 28, are members of the 363d Medical Laboratory, U. S. Army Reserve, Aurora. They are 1956 graduates of the University of Illinois Medical School and are partners in medical practice in Aurora.

Officials conducting the swearing-in ceremony were Lieutenant Colonel William J.

U. S. Army Photo

DOCTORS PETER (left) and WARD STARRETT; LT. COL. W. J. BROWN, MC, USA; and COL. C. L. WUNSCH, MC, USAR.

Brown, Chief of the Professional Services Division, Surgeon's Section, Headquarters Fifth U. S. Army, and Colonel Charles L. Wunsch, Commanding Officer of the 363d Medical Laboratory unit. Colonel Brown administered the oaths of commission.

The Starretts are believed to be the first identical twins to receive simultaneous Army Reserve commissions.

COMBAT DEVELOPMENT OFFICE ESTABLISHED

The Office of the Special Assistant to the Surgeon General for Combat Development, a newly established office, is headed by Colonel James P. Pappas, MC.

An Army Medical Service Combat Development Group has also been organized, effective June 6, for the purpose of developing, coordinating, reviewing and analyzing the world-wide Army Medical Service Combat Development Program.

REPORTS AVAILABLE

The Annual Research Task Summary of the Army (ARTS), giving information on the current status of more than 2300 Army research projects, has been placed in distribution channels.

For the first time since the Annual Research Summary was initiated five years ago, the major portion of the report, six of the nine volumes, is being made available this year for more general public use. Purpose of the summary is to provide a factual basis for review and analysis of the Army's research program, to provide information to facilitate internal coordination of the program, and to effect coordination with research supporting organizations outside of the Army.

The Army research program involves a current annual expenditure of approximately $88,000,000 on various projects. Encompassing ten major scientific fields and 74 sub-fields, projects are carried on by agencies at 59 Army installations.

Directed principally through the Army Technical Services—Quartermaster, Signal, Ordnance, Chemical, Transportation Corps, Corps of Engineers and the Medical Service—the research program involves nearly 400 colleges, universities, nonprofit institutions and outside contractors.

Only volumes one through six, all unclassified, will be available to the general public. The titles and price of each of these six volumes follows: Volume 1—*Biological, Medical, Social and Behavioral Sciences and Operations Research,* $3.25; Volume 2—*Chemistry,* $2.00; Volume 3—*Physics (Part I),* $3.50; Volume 4—*Physics (Part II), and Mathematics,* $3.00; Volume 5—*Geophysical Sciences and Engineering,* $4.75; Volume 6—*Materials Technologies,* $2.75.

The unclassified volumes may be purchased from the Office of Technical Services, Department of Commerce, Washington 25, D.C.

REAL GOOD NEWS

The Army Disciplinary Barracks at Lompoc, California, will be vacated beginning August 1, due to a decline in prison population.

Most of the approximately 400 prisoners at Lompoc, which will be occupied temporarily on a revocable permit basis by the Federal Bureau of Prisons, will be transferred to Fort Leavenworth, Kansas, the only remaining disciplinary barracks in operation by the Army.

The prisoner population has leveled off to numbers that can be confined in a single facility, provided those prisoners normally housed in Federal penitentiaries can be transferred from disciplinary barracks to the custody of the Department of Justice. The Department of Justice has agreed to accept such military prisoners on a continuing basis. The permit of occupancy at Lompoc will be indeterminate in duration, subject to return for Army use when and as required in the future.

The Army's disciplinary barracks population has declined 75 percent in the past three years due to personnel policies which have effected improvement in personnel selection; retention policies; and fewer courts-martial.

Lompoc will be the fourth disciplinary barracks to be vacated since June 30, 1957. The others were at Fort Gordon, Georgia; Fort Crowder, Missouri; and New Cumberland, Pennsylvania.

Navy

Surgeon General—Rear Adm. Bartholomew W. Hogan

Deputy Surgeon General—Rear Adm. Edward C. Kenney

BECOMES DEPUTY SURGEON GENERAL

Rear Admiral Edward C. Kenney, became Deputy Chief of the Bureau of Medicine and Surgery and Deputy Surgeon General of the Navy on June 1. He succeeded Rear Admiral Bruce E. Bradley who was assigned to command the National Naval Medical Center, Bethesda, Maryland.

Admiral Kenney is a native of Corning, Ohio. He received his Bachelor of Science degree in 1926 from Denison University, Granville, Ohio, and his Doctor of Medicine degree in 1929 from the University of Cincinnati College of Medicine. At that time he was commissioned in the Medical Corps of the Navy with his first station being at the U. S. Naval Hospital, Philadelphia, Pennsylvania. During World War II he was on the USS *Boise* when at Guadalcanal that ship was extensively damaged by enemy fire. For "extraordinary heroism" as her Senior Medical Officer during that action, Admiral Kenney was awarded the Navy Cross. From July 1944 to July 1945, he served as Staff Medical Officer for Amphibious Group Three, Pacific Fleet, participating in landings on Guam, Leyte and Lingayen Gulf. He was awarded the Bronze Star Medal, with Combat "V" for meritorious service in that assignment.

Admiral Kenney is a Diplomate of the American Board of Internal Medicine.

Official U. S. Navy Photo

R.Adm. E. C. Kenney, MC, USN

COMMANDS NNMC

Rear Admiral Bruce E. Bradley who has been Deputy Surgeon General of the Navy and Assistant Chief of the Bureau of Medicine and Surgery, has been assigned to command the National Naval Medical Center, Bethesda, Maryland, a position vacated by the retirement of Rear Admiral Thomas F. Cooper.

Admiral Bradley is a native of Raleigh, North Carolina. He attended William and Mary College, Williamsburg, Virginia, and the University of Virginia at Charlottesville, where he received the Doctor of Medicine degree in 1926. Following graduation he was commissioned in the Medical Corps of the Navy and through subsequent promotions attained the rank of Rear Admiral in 1954. He was Senior Medical Officer of an Advanced Naval Base in the Solomon Islands Area during World War II and was awarded the Legion of Merit for exceptionally meritorious conduct. He has the Second Nicaraguan Campaign Medal and also the Medal of Merit awarded him by the Government of Nicaragua.

ADMIRAL COOPER RETIRES

Rear Admiral Thomas F. Cooper, MC, U. S. Navy, who has been Commanding

Officer of the National Naval Medical Center at Bethesda, Maryland, was placed on the Officers Retired List on July 1.

Admiral Cooper, a native of Johnson County, Missouri, received his medical degree from Jefferson Medical College, Philadelphia, Pennsylvania, in 1924. During World War I he was a member of the Student Army Training Corps while at the University of Missouri where he was pursuing his studies for his Bachelor of Arts degree. Following graduation in 1924, he was commissioned in the Medical Corps of the Navy and served a one-year internship at the U. S. Naval Hospital, San Diego, California.

During the first year of World War II, he was Senior Medical Officer of the USS *Atlanta,* which was sunk by the Japanese on November 13, 1942. He was awarded the Bronze Star Medal, with Combat "V," and a citation for his services. His Asiatic-Pacific Campaign Medal carries five stars.

During his 35 years of service in the Navy, Admiral Cooper has served in many important positions, several of which were in the Bureau of Medicine and Surgery in Washington. He has been a member of the Executive Council of the Association of Military Surgeons for a number of years.

TO REAR ADMIRAL

Rear Admiral Frank P. Kreuz, Jr., Medical Corps, U. S. Navy, Commanding Officer of the U. S. Naval Hospital, was promoted to that rank on May 1 with due ceremonies accorded to him at the National Naval Medical Center, Bethesda, Maryland.

Dr. Kreuz is a native of Menominee, Michigan. After receiving his B.S. degree from Marquette University, Milwaukee, Wisconsin, in 1928, he entered the Northwestern University School of Medicine and was granted his M.D. degree in 1930. On graduation he entered the Navy Medical Corps. He became interested in orthopedics and specialized in that subject.

During World War II, Admiral Kreuz served as Senior Medical Officer on the USS *Washington* and as Medical Officer for Commander Battleships Pacific. He was awarded the Bronze Star Medal.

Official U. S. Navy Photo

R.ADM. FRANK P. KREUZ, MC, USN

Admiral Kreuz is Certified by the American Board of Orthopedic Surgery; is a Fellow in the American Academy of Orthopedic Surgeons; a Fellow of the American College of Surgeons; and a Fellow of the International College of Surgeons. He collaborated with Captain C. Shaar, MC, USN (Ret.) in writing the book, "The Treatment of Fractures by External Skeletal Fixation."

RETIRED

The following officers of the Medical Department of the Navy have been retired: Captains Lynn S. Beals, Jr. (MC), Stanley W. Brown (DC), Wilbur N. Van Zile (DC); Commander Mary J. Lindner (NC); and Lieutenant Commander Melvin A. Comstock (MSC).

HONORED

Captain Edward L. Beckman, MC, USN, who has been recently assigned to the Naval Air Development Center, Johnsville, Pennsylvania, was presented the Eric Lilijencrantz Award for the best paper on basic

research in the problem of acceleration. This award, which was made at the Aerospace Medical Association Meeting in Los Angeles recently, carries an honorarium of $500.

Captain Clifford P. Phoebus, MC, USN, who has been assigned to the Bureau of Medicine and Surgery, Washington, D.C., received the Theodore C. Lyster Award at the same meeting for outstanding achievement in the general field of Aviation Medicine.

ELECTED TO OFFICES—AAOP

Two Navy Dental Corps officers have been elected for office in the American Academy of Oral Pathology for the year 1959-1960. Captain Robert A. Colby, DC, USN, on duty at the U. S. Naval Dental Clinic, Yokosuka, Japan, was elected to President-Elect, and Commander Henry H. Scofield, Jr., DC, USN, on the staff of the U. S. Naval Dental School, National Naval Medical Center, Bethesda, Maryland, was elected to Vice-President.

ENTOMOLOGY COURSE

The Armed Forces Pest Control Board will conduct a 14-day training course in Military Entomology under the auspices of the Naval Medical School, National Naval Medical Center, Bethesda, Maryland, during August 3-16, 1959. This annual training course, given for the first time in July, 1958, has the following main objectives:

1. To provide advanced training in military entomology for active duty and reserve entomologists of the military services.

2. To make known to nonmilitary individuals and organizations the contributions which the military services have made and are making to the science of entomology and the control of arthropod pests and vectors.

3. To indicate the nature of the entomological problems which confront the Armed Forces and to stimulate scientific research in basic and applied problems which require attention.

4. To develop a continuing sympathetic and cooperative attitude toward military entomology on the part of the universities and other civilian organizations.

Air Force

Surgeon General—MAJ. GEN. OLIVER K. NIESS

Deputy Surg. Gen.—MAJ. GEN. OLIN F. MCILNAY

10TH ANNIVERSARY

The U. S. Air Force Medical Service became ten years old on July 1. On that date ten years ago the Department of the Air Force was established and with it the Medical Service with Major General Malcolm C. Grow as its first Surgeon General. Successors in line have been Major Generals Harry G. Armstrong, Dan C. Ogle, and Oliver K. Niess.

The present Surgeon General, Major General Oliver K. Niess, speaking of this first decade said: "The past decade has witnessed a change from conventional aircraft to the jet age, and we are now flying into the space age. This swift progress has demanded more and more new medical research and development to enable man to meet and overcome the physical, mental, and environmental problems encountered in high performance, high altitude, and space flight. I believe that our aviation and space medicine research has stayed well ahead of engineering and power plant developments, as it must to provide fullest support to the Air Force mission.

"In clinical medicine we have not been idle either. Since its origin ten years ago, the USAF Medical Service has constructed more than 200 new medical and dental facilities and its personnel strength has grown to where, today, we have a total of 46,000 people—all working hard to support our worldwide Air Force.

"Our Air Force residency training program in aviation medicine set the pattern which, in 1953, led to the recognition of aviation medicine as a specialty. Today more

Official U. S. Air Force Photo

(L to R) MAJ. GEN. MALCOLM C. GROW, USAF (MC), Ret.; MAJ. GEN. HARRY G. ARMSTRONG, USAF (MC), Ret.; MAJ. GEN. DAN C. OGLE, USAF (MC), Ret.; MAJ. GEN. OLIVER K. NEISS, USAF (MC), present Surgeon General.

than 100 Air Force physicians are board certified in this specialty.

"Today, there are 11 USAF hospital centers in the continental United States and one in each major overseas command, offering care in 31 medical specialties. In 1949 we had none.

"The size of our mission today is very large and growing. In 1958 there were more than 400,000 admissions to Air Force medical facilities and 11 million outpatient visits to Air Force Clinics.

"Our Air Force Clinics have developed as a new concept of military medicine to meet the vastly increased number of outpatient visits, and to replace the old 'hospital bed' concepts which do not meet the needs of a modern decentralized and flexible Air Force.

"In considering these and the many other aspects of our worldwide Medical Service operation today, there is no question but that our first 10 years have been a decade of rapid progress to sustain our continuing goal of maximum medical support of the Air Force mission and complete clinical care of the Air Force man and his family."

ASSOCIATION'S PRESIDENT PROMOTED

The Association of Military Surgeons of the United States proudly announces the nomination of its president, H. H. Twitchell, to the rank of major general.

A biographical sketch of General Twitchell appeared in the January issue of MILITARY MEDICINE (Vol. 124:4, 1959). He is at present Surgeon USAFE with address—APO #633, New York, N.Y.

ASSIGNMENTS

Brig. General M. S. White, USAF (MC), became Surgeon of the Air Training Command, Randolph Air Force Base, Texas on July 1. He succeeded Brig. General James G. Moore, USAF (MC) who assumed command of the USAF Hospital at Lackland Air Force Base.

General White's recent assignment in Washington was that of Director of Medical Staffing and Education in the Office of the Surgeon General of the Air Force.

General White is a past president of the Aerospace Medical Association and a member of the Executive Council of the Association of Military Surgeons of the United States. He entered the military service in 1931 and most of his career has been as a flight surgeon.

ASSIGNMENT

Colonel Larry A. Smith, USAF (MC), became the new Director of Medical Staffing and Education in the Office of the Surgeon General of the Air Force on July 1. He succeeded Brig. General M. S. White who has been assigned as Surgeon of the Air Training Command. For the past year Colonel Smith has been Deputy Director of Medical Staffing and Education.

A graduate of the Northwestern University Medical School (1938), Doctor Smith entered military service in 1939 and specialized in internal and aviation medicine. During World War II he served in the China-Burma-India Theater.

ASSIGNMENT

Major Charles A. Berry has been assigned to the Office of the Surgeon Gen-

eral as Chief of the Aircrew Effectiveness Branch which is the newly created Division of Aviation Medicine.

Dr. Berry's last assignment was Chief of the School of Aviation Medicine's Flight Medicine Department, Randolph Air Force Base, Texas.

DECORATION

Colonel Fratis L. Duff, USAF (MC), recent commander of the Gunter Branch of the School of Aviation Medicine, Gunter Air Force Base, Alabama, was awarded the Oak Leaf Cluster to his Legion of Merit on June 12. Presentation was made by Major General Otis O. Benson, Jr., Commandant, School of Aviation Medicine, Randolph Air Force Base, Texas.

Colonel Duff has been assigned as Deputy Surgeon, U. S. Air Forces, Europe, APO #633, New York.

AEROMEDICAL RESEARCH AWARD

Dr. Lawrence E. Lamb, Head of the Department of Internal Medicine at the Air Force School of Aviation Medicine, Randolph Air Force Base, Texas, was awarded the Dr. Arnold D. Tuttle Award at the recent meeting of the Aeromedical Association in Los Angeles. The award is accompanied by a plaque and $500.

Dr. Tuttle is a native of Fredonia, Kansas, served two years in the Navy during World War II and returned to civilian life to earn his M.D. degree from the University of Kansas in 1949. Since that time he has specialized in cardiology.

COMMENDATION MEDALS

Colonel Harold V. Ellingson, Director of Education and Plans, and Colonel Lawrence J. Milch, Chief, Department of Pharmacology-Biochemistry, School of Aviation Medicine, Randolph Air Force Base, Texas, were recently presented with Air Force Commendation Medals by Major General Otis O. Benson, Jr., Commandant of the School.

Colonel Milch will be remembered as the author of several articles recently published in MILITARY MEDICINE on lipoprotein metabolism.

SCHOOL OF AVIATION MEDICINE STARTS MOVE

The Air Force School of Aviation Medicine will start moving to its new multi-million dollar quarters at Brooks Air Force Base this month. Major Otis O. Benson, Jr., Commandant of the School, plans for the official dedication on November 14, 1959.

Planning for the new location began in 1946 when Major General Harry G. Armstrong, former Surgeon General of the Air Force, now retired, was Commandant of the School.

The School at its new location at Brooks will have seven buildings.

EMERGENCY MEDICAL CARE TRAINING KIT

A simplified medical training kit for teaching military or civilian non-medical personnel the basics of emergency medical care has been developed by Major James D. Clark, USAF (MSC), and M/Sgt. Lymen E. Pyle of the Gunter Air Force Base, Alabama, branch of the Air University's School of Aviation Medicine.

The new kit contains more than 300 color slides and four film strips, with four simplified instructor's manuals plus first aid and disease control manuals for each student. The training period is said to be reduced from 45 hours to 15 hours.

The kit was developed as a part of Phase I (Buddy Care) of the Department of Defense Emergency Medical Care Program.

TWO-MAN SPACE CABIN SIMULATOR

A two-man space cabin simulator capable of sustaining two men for up to 30 days will be delivered to the School of Aviation Medicine at its new site at Brooks Air Force Base next fall.

This new cabin will be an improvement on the one-man simulator in which A/1C Donald G. Farrell spent a week last year. The new cabin will contain two chair-beds, air and water purifying agents, and a com-

plex system of controls that will enable the occupants themselves to adjust the simulated cabin altitude and climatic conditions. The volume of the two-man cabin will be 380 cubic feet.

Most of the experiments will be carried on at a height of 18,000 feet since engineers consider that a rocket-ship cabin can retain this pressure without bursting in the vacuum of space.

It has been pointed out already that the two men chosen for these experiments will have to be compatible companions since conflicts may arise between them during this thirty day period. Long past experience in the wilds of the North revealed cases of "cabin fever" when two men were confined in a small set of quarters during the dark cold winter months. However, at those times they did not have the advantage of tape recordings, etc., to break the monotony.

The Space Medicine Division of the School of Aviation Medicine is headed by Col. A. Campbell, USAF(MC).

AEROSPACE MEDICINE COURSE

In September 1959 the first Advanced Course in Aerospace Medicine for senior medical officers from allied nations will begin at the USAF School of Aviation Medicine, Randolph Air Force Base, Texas.

The 27-week course will consist of three parts: academic aviation medicine, physiological training program, and practical aspects of aviation medicine. The quota for each class is 15 students. To be eligible students must have completed the primary course in aviation medicine at the USAF School of Aviation Medicine or a comparable course in their respective countries.

Public Health Service

Surgeon General—LEROY E. BURNEY, M.D.
Deputy Surg. Gen.—JOHN D. PORTERFIELD, M.D.

WORLD HEALTH ORGANIZATION

Dr. Leroy E. Burney, Surgeon General of the U. S. Public Health Service and President of the XI World Health Assembly presided at the XII World Health Assembly, held recently in Geneva, until the new president, Sir John Charles of the United Kingdom, was elected and took over the chair.

Dr. Burney suggested that each country hold a National Health Assembly to discuss health problems and possible solutions. The meetings could be climaxed by an International Conference on Health held in conjunction with the World Health Organization. Dr. Burney said, "The impact of such a marshaling of ideas and resources would be tremendous. It is possible that such a concentration of effort would advance world health in a short time to a point that we might hope to reach in 50 or 100 years under normal circumstances."

The World Health Organization with Headquarters in Geneva, Switzerland, has a Regional Office (Pan American Sanitary Bureau) at 1501 New Hampshire Ave., N.W., Washington 6, D.C.

APPOINTMENT

Nurse Director Margaret Fecisen Knapp was recently appointed as chief of the Nursing Services Branch of the Division of Indian Health. She succeeded Mrs. Florence Callahan, who became regional nursing consultant for Region VII of the U. S. Department of Health, Education, and Welfare with offices at Dallas, Texas.

Miss Knapp, a native of Ithaca, New York, has served with the Indian health program since 1955, and now as chief of the Nursing Service will supervise those activities for 385,000 American Indians and Alaska Natives.

JOINS USPHS

Dr. Cyrus Maxwell, formerly of the American Medical Association's Washington Office, has taken a position with the Public Health Service in its commissioned corps. He will remain in Washington.

NATIONAL LIBRARY OF MEDICINE

A ground-breaking ceremony was held on the site of the new National Library of

Medicine building on the grounds of the National Institutes of Health, Bethesda, Maryland, at 2:30 P.M. on Friday, June 12, 1959.

Secretary Arthur S. Flemming of the Department of Health, Education, and Welfare gave a short address. Senator Lister Hill, co-author of the National Library of Medicine Act turned the first spade of earth. The Chairman of the Board of Regents of the National Library of Medicine, Dr. Champ Lyons was the chairman of the proceedings.

FOOD POISONING

Clostridium perfringens was identified as the bacteria which caused the recent outbreak of food poisoning aboard a train from Toledo, Ohio, to Washington, D.C. These bacteria are reported to account for about 25 percent of food poisoning cases in England but have not been considered a hazard here.

Further study is being made and informational materials will be published at a later date by the Public Health Service.

REPORT AVAILABLE

The Report of the U. S. Public Health Mission to the Union of Soviet Socialist Republics (PHS Publ. No. 649) is available from the Superintendent of Documents, Government Printing Office, Washington 25, D.C., for 45¢ a copy.

The report states "One of the dramatic accomplishments in health in recent times has been the almost explosive extension of disease prevention and medical care over the vast extent of the Soviet Union."

Also, "It would appear quite clear that the pestilential diseases and the diseases of filth have been substantially brought under control. Malaria as a significant problem in Russia is a thing of the past and on the way to eradication. Veneral disease has been mastered, but tuberculosis remains a plague."

And, "Soviet physicians upon graduation are not exposed to a broad liberal university education. They are trade-school graduates—left to glean from laboratory demonstrations or textbook descriptions, and to acquire additional skills after graduation with a physician's diploma—not a university degree. Their purpose is to give maximum medical service, as economically and as tirelessly as the State decrees. Service comes first and foremost in the interest of the State; personal time and preferences must be subordinated to the interest of the enterprise concerned, according to a norm established for the benefit of a State economy."

"In the Soviet Communist philosophy, the worker is a 'fund of gold' for the country. Hence, it is important to maintain the maximum of human power for production. In other words, their motivation towards health is primarily utilitarian."

"Soviet medical care likewise differs from ours in many other ways. The system does not allow for free choice of physician, nor does it allow the physician to select his place of practice. Soviet medicine, moreover, is principally dependent upon clinical diagnosis with a minimum of laboratory support. The Soviet pharmacopeia in practice is much more limited quantitatively and qualitatively than ours as to the spectrum of available antibiotic and chemotherapeutic agents."

Veterans Administration

Chief Medical Director—WILLIAM S. MIDDLETON, M.D.

Deputy Chief Med. Dir.—R. A. WOLFORD, M.D.

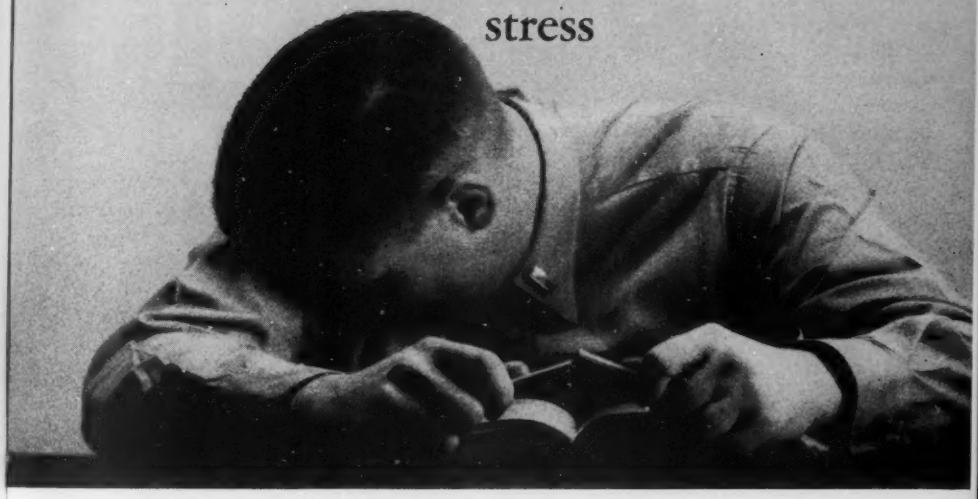
HEADS MEDICAL SPECIALTY GROUP

Dr. Edward G. Warnick was recently elected to the office of President of the Chicago Roentgen Society. For the previous two years he was vice-president and program chairman.

In 1953, Dr. Warnick became the Chief of the Department of Radiology at the newly built Veterans Administration West Side Hospital in Chicago.

In 1957, he assumed his present position as Chief of Diagnostic Radiology at the V.A. Research Hospital in Northwestern Uni-

for fast, effective
control of symptoms
in situational
stress



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For daylong control of symptoms, prescribe convenient, economical 'Compazine' Spansule® sustained release capsules. A single 'Spansule' capsule taken in the morning provides daylong therapeutic effect. There is little likelihood of forgotten doses as your military patient continues his duties.

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Also available: Tablets, Ampuls, Multiple dose vials, Suppositories and Syrup.

SMITH KLINE & FRENCH LABORATORIES leaders in psychopharmacology

versity Medical Center, and as Assistant Professor in Radiology at the Northwestern University School of Medicine.

ASSIGNMENT

Dr. Ernest M. Tapp who has been manager of the Veterans Administration hospital at Dearborn, Michigan, since July 1957, has been reassigned to the VA hospital at Poplar Bluff, Missouri, in the dual role of manager of the hospital and director of the professional services. During World War II he served in the Army Medical Corps and attained the rank of lieutenant colonel. His service with the Veterans Administration began in 1931.

CAUSE OF HALLUCINATIONS?

Abnormal brain chemistry may the cause of hallucinations. At least this is strongly suggested by the research findings of Dr. Amedo S. Marrazzi, Director of the Veteran Administration's Research Laboratories in Neurology, Leech Farm Road, Pittsburgh, Pennsylvania.

Brain produced "psychotogens" stretch a chemical curtain between the association center and the visual center of the brain thus causing a disruption of communication.

Dr. Marrazzi has worked with various drugs and a group of volunteers in his research projects on hallucinations.

Previously Dr. Marrazzi found that an excess of a naturally occurring chemical in the brain, serotonin, a chemical relative of mescaline, slows transmission of messages along the brain's nerve circuits and disrupts relay of thoughts.

MEDICAL TECHNOLOGISTS WANTED

Many openings exist at Veterans Administration hospitals and outpatient clinics throughout the nation for the newly established position of medical technologist.

The jobs are supervisory, between the subprofessional and professional levels, and are in grades GS-7 through GS-11, with annual salaries of from $4,980 to $8,230.

Application for appointment may be made to the Boards of Civil Service Examiners at VA hospitals in Albuquerque, N.M., the Bronx, N.Y., Cleveland, Ohio, Hines, Ill., Houston, Tex., Long Beach, Calif., Memphis, Tenn., Minneapolis, Minn., Portland, Ore., Richmond, Va., and West Haven, Conn.

Information on the jobs may be obtained at any VA hospital.

Miscellaneous

CONFERENCE ON AGING

The Secretary of Health, Education, and Welfare, Arthur S. Flemming, has named 130 persons to serve on the National Advisory Committee for the White House Conference on Aging which is to be held in Washington in January 1961.

Secretary Flemming said, "There are almost 50 million Americans who are 45 years of age and over in our country today whose economic security and retirement problems, including health and medical care, recreation, housing and civic participation, will be of major concern to the White House Conference on Aging."

Former Congressman Robert W. Kean of New Jersey is chairman of the Advisory Committee.

POTABLE WATER

Conversion of salt water to potable water by an economical process is probably one of the world's greatest needs. To date no cheap method has been found.

The article recently in *Science News Letter* (May 16/'59) is most exciting. Here we learn of a plant on the island of Balashi, Aruba, in the Caribbean, where the distillation of salt water is combined with the production of a surplus of electricity.

This $11,000,000 plant which is the first of its kind can produce 2,700,000 U.S. gallons of potable water a day. The cost per 1,000 gallons is $1.75. There are 55,000 inhabitants on the island. From this plant alone each person could have slightly over

KENACORT

SQUIBB TRIAMCINOLONE

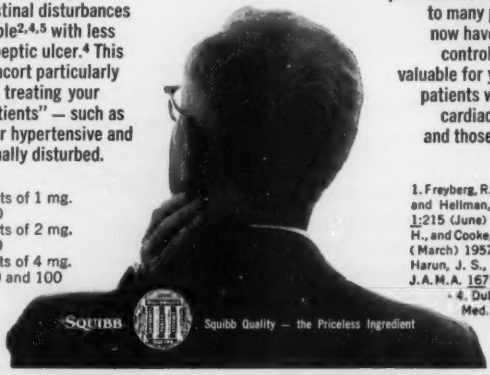
for patients starting on corticoids

Kenacort safely starts your patients off right — with all the benefits of systemic corticosteroid therapy and few side effects to worry about. Increased corticoid activity is provided on a low dosage schedule[1-3] without edema,[1-4] psychic stimulation[1-3] or adverse effect on blood pressure.[1-3,5] A low sodium diet is not necessary.[4,5] Gastrointestinal disturbances are negligible[2,4,5] with less chance of peptic ulcer.[4] This makes Kenacort particularly valuable in treating your "problem patients" — such as the obese or hypertensive and the emotionally disturbed.

Supplied:
Scored tablets of 1 mg.
Bottles of 50
Scored tablets of 2 mg.
Bottles of 50
Scored tablets of 4 mg.
Bottles of 30 and 100

for patients with dermatoses requiring corticoids

Kenacort, particularly in treating inflammatory skin conditions, has proved effective where other steroids have failed. It quickly alleviates itching, erythema, and irritation with its enhanced antiallergic, anti-inflammatory and antipruritic activity. Because of its low dosage[1-3] and relative freedom from untoward reactions,[1-5] Kenacort provides corticosteroid benefits to many patients who until now have been difficult to control. It is particularly valuable for your dermatologic patients with hypertension, cardiac disease, obesity and those prone to psychic disturbances.



1. Freyberg, R.H.; Berntsen, C.A., Jr., and Hellman, L.: Arth. & Rheum. 1:215 (June) 1958. • 2. Sherwood, H., and Cooke, R.A.: J. Allergy 28:97 (March) 1957. • 3. Shelley, W. B.; Harun, J. S., and Pillsbury, D. M.: J.A.M.A. 167:959 (June 21) 1958. • 4. Dubois, E. L.: California Med. 89:195 (Sept.) 1958. • 5. Hartung, E. F.: J.A.M.A. 167:973 (June 21) 1958.

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50 gallons of water a day, which is not an insignificant amount.

Nothing is said in the article of by-products other than the electricity but there must be many others—for instance magnesium and iodine. The day is to come when this great source of minerals will be used and the by-product will be potable water. Think what that will do for the desert lands bordering on the seas of the world.

WORLD MALARIA ERADICATION CAMPAIGN

Money is needed to finance the World Health Organization Malaria eradication program. In fact $7 million will be needed for 1960.

Dr. M. G. Candau, WHO Director-General, stated that governments should contribute voluntarily. If they do not the program will be hampered. Foundations, Industry, Labor Organizations, Institutions, and individuals are invited to make contributions. The United States has thus far contributed about 90% of the funds for this campaign.

Malaria which was at one time a very prevalent disease in the United States has been practically eliminated. The eradication of malaria on a global basis will take not only money but the sincere interest of all nations where that disease is of major proportion.

ANY NEW IDEAS?

Inventors were asked to work on a number of new ideas when the National Inventors Council met in Washington recently.

There were 28 new devices or systems needed by the Armed Forces as listed in the "Supplement to Technical Problems Affecting National Defense," which can be obtained from the U. S. Department of Commerce (NIC), Washington 25, D.C.

Here are some of the problems pertaining to health and sanitation: "Microbiological Food Production from Inedible Natural Sources," "Methods for Preventing the Hardening of Baked Products During Long-Term Storage," "New and Better Compounds for Use as Fungicides in Military Material and Equipage," and "Insect Repellents to Protect Personnel from Insect Attack." In the case of repellents, longer acting substances are needed.

NARCOTICS

In 1957, there were 44,146 known drug addicts in the United States. Ninety-three percent of these addicts use heroin. The traffic in narcotics is "big business." One kilogram (2.2 lbs.) of pure heroin purchased at $4,000 may bring as much as $200,000 by the time it has been diluted. It then reaches the hands of an addict on the streets of the United States.—Federal Bureau of Narcotics report.

THOSE CONTRIBUTIONS

Independent health appeals provide less than 8 percent of the total funds expended for medical research in this country. Of the $575 million expected to be spent for medical research in 1959, the Federal Government will provide $295 million; industry $190 million; philanthropic foundations and voluntary health appeals, $47 million; endowments, $19 million; state governments, $16 million, and private contributions, direct to hospitals and medical schools, $8 million. —Eve Edstrom, *The Washington Post* and *Times Herald,* May 3/59

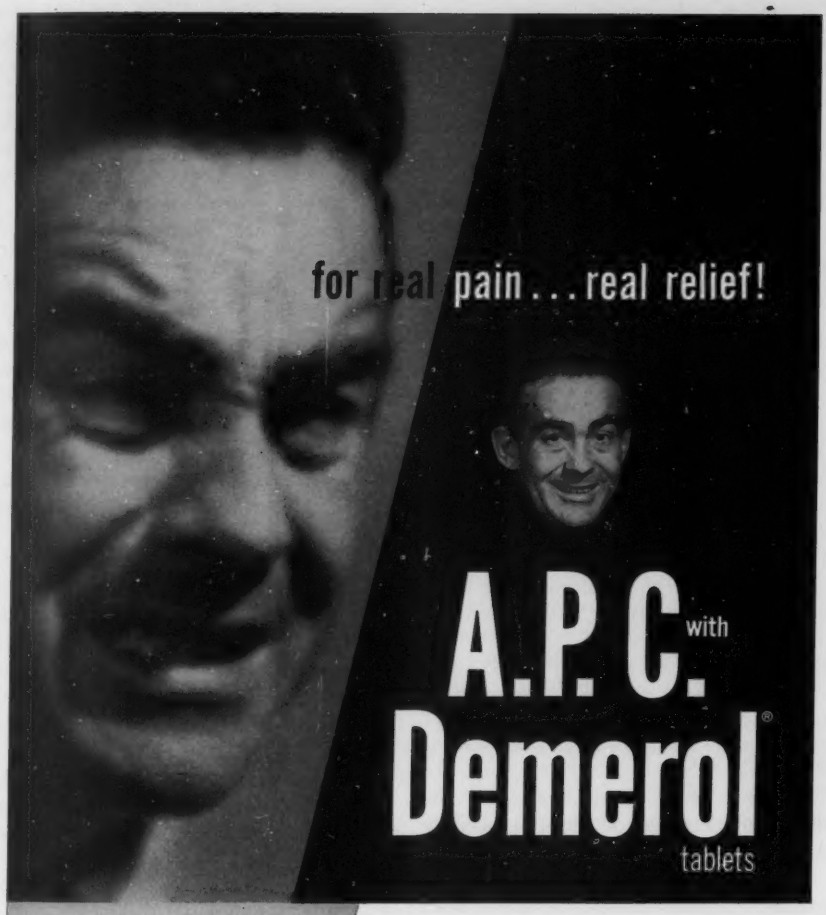
RESEARCH FELLOWSHIPS

Summer research fellowships totalling $115,000 will be awarded this year to medical students in 97 U.S. and Canadian medical schools by Lederle Laboratories Division, American Cyanamid Company.

Four-year schools have been awarded $1,200 for not less than two students, and two-year schools have been awarded $600. Selections are made by deans of the medical schools. The Lederle fellowships have been given annually for six years.

UROLOGY AWARD

Three prizes for essays on the result of some clinical or laboratory research in Urology are to be given by the American Urological Association at its meeting May 16-19, 1960.



appreciably more effective than A.P.C. with codeine

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each tablet contains:

Aspirin	200 mg. (3 grains)
Phenacetin	150 mg. (2½ grains)
Caffeine	30 mg. (½ grain)
Demerol hydrochloride	30 mg. (½ grain)

adult dose: 1 or 2 tablets repeated in three or four hours as needed.

supplied: Bottles of 100 and 1000 tablets, scored.

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Competition is limited to Urologists who have been graduated not more than ten years, and to hospital interns doing research in Urology.

LOCATION AVAILABLE

In Nebraska City, Nebraska, a town of 8,000, on a main highway from Omaha, there is an office which is vacant due to the death of a physician. The office is fully equipped and is in a modern building. Interested physicians may contact Mrs. William S. Ramacciotti, widow of the late Dr. Ramacciotti, 1602 First Ave., Nebraska City, Neb.

GRAND ROUNDS FILMS

GRAND ROUNDS No. 8 film has been added to the list that is available for showing before any group in the medical or allied professions, including students.

This unabridged 16 mm film of the March 18 showing deals with problems in the management of chest diseases. Showing time is 90 minutes.

Further information may be obtained from the Upjohn Company, Kalamazoo, Michigan or one of its representatives.

MEETING IN PARIS

The Third International Congress of The World Confederation for Physical Therapy will be held in Paris, France, September 6-12, 1959.

Further information may be obtained from the American Physical Therapy Association, 1790 Broadway, New York 19, N.Y.

INTERNATIONAL MILITARY MEDICINE COURSE

Word has come from the International Committee of Military Medicine and Pharmacy (Liege, Belgium) that there will be an international course for young military surgeons at Macolin, Switzerland, Sept. 11-19, 1959. The number is limited to 100.

Further information may be obtained from the Secretary-General, International Committee of Military Medicine, Military Hospital, Liege, Belgium.

CANCER SYMPOSIUM

A "Symposium on Evaluation of Early Diagnosis of Cancer" will be held at the Biltmore Hotel, New York, October 26-27 during the Annual Scientific Session of the American Cancer Society.

The program will give 12 hours of Category II Credit for members of the American Academy of General Practice. Further information may be obtained from the American Cancer Society, Inc., 521 West 57th St., New York 19, N.Y.

HEADQUARTERS OFFICE AAMA

The American Association of Medical Assistants, an organization made up of nurses, technologists, and medical secretaries, has opened a national office at 510 North Dearborn St., Chicago 10, Ill.

The annual meeting of the association will be held in Philadelphia, October 16-18.

PROTHROMBIN-TIME DETERMINING APPARATUS

A Prothrometer has been developed to allow the prothrombin time to be read directly. This is a portable electric apparatus with continuous temperature control.

REPORTS AVAILABLE

The following reports may be obtained through the Office of Technical Services, U. S. Department of Commerce, Washington 25, D.C.:

Studies on Erythropoiesis, Semiannnual Report to the Atomic Energy Commission, Argonne Cancer Research Hospital (ACRH-8); 151 p., $3.00.

Techniques for Exposure of Mice to Aerosols of Radioactive Particles (HW-52368); 22 p., 75¢.

Studies on Sub-Fabric Burns: The Relationship of Surface Appearance and Depth of Damage—A Method of Study, Preliminary Results, and Observations of Wound Healing (UR-538); 11 p., 50¢.

Studies on Large Area Sub-Fabric Burns: The Effect of An Air Space Between a Two Layer System (UR-539); 18 p., 75¢.

Extending Human Tolerance to Heat by Prior Body Cooling (PB 151469); 20 pp., 50¢.

Bibliography of Technical Reports on the Effects of Fallout (UCRL 8412), compiled by the Atomic Energy Commission, current to July 1, 1958; 70 pp., $2.00.

Human Tolerance to Prolonged Forward and Backward Acceleration (PB 151422); 34 pp., $1.00.

HISTORY OF THE MEDICAL DEPARTMENT, U.S. ARMY, WORLD WAR II

The following books which have been published are available for purchase from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. When ordering books send check or money order.

Title	*Price*
Hospital and Evacuation	$4.00
Dental Service	3.25
Environmental Hygiene	3.50
Personal Health Measures and Immunization	3.25
Communicable Diseases	5.50
Hand Surgery	3.75
General Surgery	4.25
The Physiologic Effects of Wounds	3.50
Vascular Surgery	4.25
Ophthalmology and Otolaryngology	5.00
Orthopedic Surgery, European Theater of Operations	4.00
Orthopedic Surgery, Mediterranean Theater of Operations	4.00
Neurosurgery	5.00
Cold Injury, Ground Type	6.25
(Although not in the historical series, the following publication is also available for purchase from the Superintendent of Documents)	
Emergency War Surgery, NATO Handbook	2.25

WORLD HEALTH ORGANIZATION PUBLICATIONS

Intermediate Hosts of Schistosoma Monog. Series No. 37/'58	$4.00
Influenza Vol. 20, No. 2-3/'59	4.00
Venereal Infections & Treponematoses Vol. 19, No. 3/'58	2.00
International Sanitary Regulations (Annotated Edition)	1.00
Respiratory Virus Diseases TRS No. 170/'59	.60
Foreign Student & PG Public Health Courses	.30
Neurotropic Virus Diseases Chron. WHO, Vol. 12, No. 9/'58	.30
Auxiliary Dental Personnel TRS No. 163	.30
Health Statistics TRS No. 164/'59	.30
Plague TRS No. 165/'59	.30
Public Health Nursing, 4th Report TRS No. 167	.30
Hypertension and Coronary Heart Disease TRS No. 168/'59	.30

Above may be obtained from the Columbia University Press, IDS, 2960 Broadway, New York 27, N.Y.

MEDICAL BOOKS AND JOURNALS WANTED

Poland is in need of new and used medical textbooks, reference books and journals. These are needed in medical schools and teaching hospitals many of the students of which read English.

Individuals and organizations may send books and journals prepaid postage, express or freight to Mr. Maryan Chodacki, Polish Institute of Arts and Sciences in America, 145 East 53rd St., New York 22, N.Y. Individuals and groups with contributions but without funds to pay shipping costs to New York should write to Mr. Chodacki.

BOOKS NEEDED

The Mahatma Ghandi Memorial College, Udipi, Mysore State, India, is in need of hard-cover books that have to do with medicine, engineering, and architecture. Students are poor and cannot afford to buy textbooks essential to their studies.

Those having any surplus books are encouraged to aid this worthy cause, and are asked to inscribe the books with the name of the donor or donors and if desired add a few friendly words.

Postal rate is 3¢ for first two ounces and 2¢ for each additional two ounces. Be sure to mark package "Books."

SPACE AGE

Much good may come out of shooting men through space to other planets. Should they find one inhabited by intelligent beings who are able to live together in peace, they might discover the secret and pass it on to us.—P-K *Sideliner,* Peter Kuntz & Co.

NATIONAL DEBT

Because the national debt now stands at $280.9 billions, every man, woman and child in the United States owes $1,604. During the administration of George Washington the national debt represented $18 per capita. —*Journal of Business Education.*

INTERFERENCE

A young mother paying a visit to her doctor, made no attempt to restrain her 5-year old son, who was ransacking an adjoining treatment room. But finally an extra-loud clatter of bottles did prompt her to say, "I hope, doctor, you don't mind Billy being in your examining room."

"No," said the doctor calmly. "He'll be quiet in a moment when he gets to the poisons."—*Scarboro Missions.*

CAR EXPENSES

It costs $1,555 a year to own and operate a medium-priced car with eight-cylinder engine and automatic shift, according to Runzheimer & Co., Chicago research firm. The estimate is based on 10,000 miles of driving and trade-in every 45,000 miles. Operating cost for lower-priced, six-cylinder, manual-gearshift car: $1,264.—*AMA News,* June 1/'59

Honor Roll

Since the publication of our last list, the following sponsored one or more applicants for membership in the Association:

Lt. Donald J. Foster, MC, USN
Col. Carl J. Schopfer, MC, NJ NG
Michael L. Virgilio, M.D.
Max Krauss, Ph.D.
Col. Henry M. Butler, MSC, USAF
Col. Louis F. Saylor, MC, USA
Col. Charles Mueller, USA, Ret.
Richard F. Boone, M.D.
Col. Robert E. Bitner, USA, Ret.
Dr. Julio Estevez
Cdr. David S. Long, Jr., DC, USN
Capt. Ralph D. Ross, MC, USN
Dr. C. J. Van Slyke
Med. Dir. John C. Cutler, USPHS

New Members

Capt. Emmett Franklin Norwood, MC, USN
Lt. Col. Joseph R. Jehl, MC, NJ NG
Capt. Samuel Gullo, DC, USAF-R
Lt. James B. Mullen, USPHS-R
Capt. Robert R. Dugan, MC, USAF-R
SA Surg. Marlin D. Greenhalgh, USPHS
Lt. Col. Chesley N. Hawk, DC, USAF-R
SA Surg. Ira F. Wheeler, USPHS-R
Lt. Col. Robert E. Englert, DC, USAF-R
Med. Dir. James Avery Finger, USPHS
Lt. Col. Owen W. Hartman, MC, USAF-R
SA Vet. Walker S. Poston, USPHS-R
Maj. Thomas E. Kinnane, Jr., MSC, USAF-R
Col. Harry P. Harper, MC, Wash. ANG
Lt. Col. W. M. Fitzhugh, Jr., MC, USAF-R
Comdr. George R. Wall, USPHS-R (Inact.)
Sr. Surg. John J. Brennan, USPHS
Sr. Scient. John R. Kinzer, USPHS-R
Capt. Horace M. Rosteing, MC, USA
Lt. Col. Thelma J. Ryan, ANC, USAR
San. Dir. Ralph L. Perkins, USPHS
Maj. Jack Tendler, MC, USAR
Maj. Joseph W. Kahn, MC, USAF-R
Capt. Winfrey W. Goldman, Jr., MC, USAF
Maj. Glenn M. Morris, MC, USAR
Capt. Helen Doriski, NC, USAF-R
Sr. Surg. Edward C. Mazique, USPHS-R (I)
Cdr. Edgar Powell Berry, MC, USNR
Sr. Asst. Dent. Surg. Lawrence K. Levin, USPHS-R (I)
Sr. Surg. Russell M. Husted, USPHS-R
Capt. Burl Foster, USAF-R (MSC)
SA Surg. Duncan McCollester, USPHS
Lt. Col. Dean C. Kleavan, DC, USA

Capt. Charles L. Brown, MC, USAR
Capt. Arthur J. Grossman, USAF-R (MC)
Surg. Warren A. Rasmussen, USPHS-R
Major L. E. Epplett, USAF-R (DC)
SA San. Eng. Arthur E. Sullivan, USPHS
Lt. Col. C. E. Ericson, USAF-R (MSC)
Capt. William S. Augerson, MC, USA
Capt. Lewis E. Curlee, USAF-R (MC)
1/Lt. Victor J. Gentile, USAF-R (DC)
Brig. Gen. Perrin H. Long, USAR, Ret.
Col. Dimitri Filostrat, USAF-R (DC)
Maj. Noah M. Dixon, MC, USAF
Capt. Gerald F. Gray, USAF-R (MC)
Capt. James S. Reynolds, MC, USAR
Capt. Edwin S. Bielot, USA
Col. Frank O. Alexander, MC, USA
1/Lt. Lee C. Foster, Jr., MSC, USAF-R
Major Robert E. Davison, USAF-R, DC
Lt. Col. Robert L. Joseph, DC, USAR
Capt. Allan D. Silverman, DC, USAR
Lt. Adib Hanna Barsoum, MC, USNR
Lt. Ira H. Slade, Jr., MC, USNR

Deaths

LEYDA, Paul Leighton, Jr., Captain, Medical Corps, USAR, died at Denver, Colorado, February 24 at the age of 36. He was a graduate of the University of Colorado School of Medicine (1946). His office was at 54 East Third Ave., Denver, Colo.

SPERRY, James R., Colonel, U. S. Army, Retired, died at his home in West Hyattsville, Maryland, May 10, of a heart attack. He was 67.

Colonel Sperry a native of Ohio, received his D.V.M., degree from Ohio State University in 1915. He entered the Army Veterinary Corps in 1917 and remained until his retirement in 1952 when he took a teaching position at the University of Maryland.

He is survived by his widow who lives at 2100 Charleston Place, West Hyattsville, Maryland; a son and a daughter.

SCHEFFEL, Alfred G., Lieutenant Commander, Medical Corps, USNR, died at Santa Monica, California, February 13, at the age of 45. A graduate of the Northwestern University Medical School (1937) he had specialized in orthopedic surgery and was certified by the American Board of Orthopaedic Surgery. During World War II he served with the U. S. Navy Medical Corps. Dr. Scheffel was a member of the American Academy of Orthopaedic Surgeons and a Fellow of the American College of Surgeons and the International College of Surgeons. He had maintained an office at 300 Beverly Drive, Beverly Hills, California.

WALSON, Charles M., Brigadier General, U. S. Army, Retired, died of a heart attack at Walter Reed Army Hospital, May 14, at the age of 75.

General Walson, a native of Delaware, received his medical degree from Jefferson Medical College in 1906. He entered the Army Medical Corps in 1911 and graduated from the Army Medical School in 1912. In 1914 he became surgeon to the Expeditionary Forces, Vera Cruz, Mexico. During World War I he was assistant to the chief surgeon, American Expeditionary Forces, France. At times during his career in the Army he was executive officer at Walter Reed Army Hospital, assistant to the 7th Corps Area Surgeon, Omaha, Nebraska, and hospital commander at several posts. His duty in the Office of the Surgeon General of the Army (1936-1940) was that of chief of Plans and Building Branch. In 1940, he was Second Corps area surgeon until 1942, when he became Surgeon of the First Army after consolidation of the 1st and 2nd Area Commands.

After retirement in 1947, he became Administrator of the American Red Cross Blood Program for the Greater New York area until 1951, when he accepted a similar position in the Washington, D.C., area.

Until a year ago he was the treasurer of the Board of Trustees, Retirement Fund, of our Association.

He is survived by his widow who resides at 1428 Floral St., N.W., Washington 12, D.C., a son, Lt. Colonel Charles W. Walson, and a daughter, Mrs. Elizabeth W. Bixby, now living in France with her husband, Colonel George W. Bixby. Interment was in Arlington National Cemetery.

NINTH SEMI-ANNUAL INSTITUTE FOR OFFICERS OF THE ARMY MEDICAL SPECIALIST CORPS. HELD AT WALTER REED ARMY MEDICAL CENTER, WASHINGTON, D.C., MAY 10-16, 1959

U. S. Army Photo

1st Row (L to R): Mr. Bernard J. Cronin, *Consultant,* Mr. Bertram Strauss, *Consultant,* Maj. Ardeth J. Wick, Capt. Agnes J. Rudberg, Capt. Mary A. Armstrong, Maj. Louise S. Andersland, Lt. Col. Helen Davis, *Projects Officer.*

2nd Row (L to R): Maj. Lucile M. Haag, Maj. Helen T. Klemm, Capt. Norma G. Learned, Capt. Margaret E. Mahoney, Capt. Mary E. Sacksteder, Maj. Ethel W. Coeling.

3rd Row (L to R): Capt. Florence Murley, Maj. Betty Price Chellman, Maj. Agnes A. Brigham, Capt. Priscilla K. Gilchrist, Capt. Anastatia Cotter, Maj. Leona B. Prescott, Capt. Winnifred E. Soady.

4th Row (L to R): Maj. Emily Fairbanks, Maj. Elizabeth M. Nachod, Maj. Ruth E. Lawson, Maj. Elna C. Petersen, Maj. Evelyn G. Summers, Capt. Eileen F. O'Brien, Maj. Edith Newton.

5th Row (L to R): Capt. Gertrude Murray, *Course Director,* Capt. Dolores L. Evanson, Maj. Margaret E. Radke, Lt. Col. Alene V. Ness, Maj. Ruth W. Ellinger, Maj. Marion D. Douglass, Capt. Jane Ardell Carleton.

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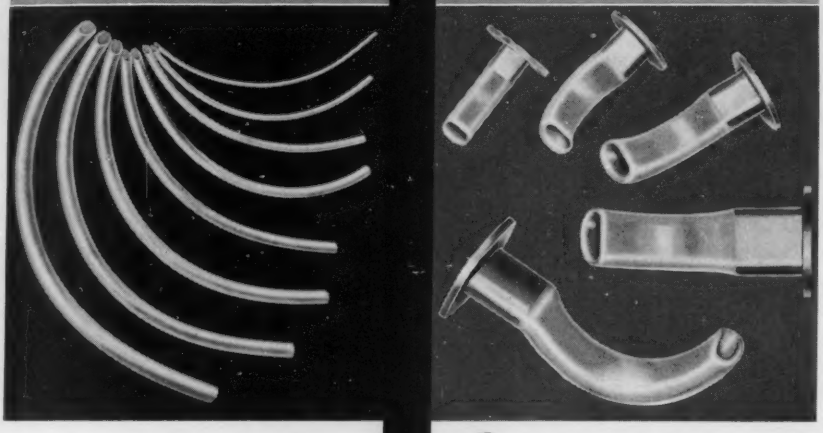

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WRITE FOR OUR PROFESSIONAL CATALOG

New York Chapter

THE New York Chapter of the Association of Military Surgeons of the United States held its Spring meeting at the Officers' Club, Governor's Island, New York, on the evening of May 28. Approximately 175 persons, members, their wives, and guests, sat down to a delicious steak dinner.

In the absence of Colonel James Q. Simmons, Medical Corps, U. S. Army, President of the chapter, who had been detained on a trip to Europe, Colonel Wilbur A. Smith, USAF(MC), Reserve, vice-president of the chapter, presided. He introduced Major General George E. Armstrong, former Surgeon General of the Army, who acted as toastmaster for the evening.

Out of respect for the late Brigadier General Charles M. Walson, who activated the New York Chapter after World War II, all present stood for a minute of silence.

General Armstrong, himself an eloquent speaker, introduced Rear Admiral Chester C. Wood, U. S. Navy, Commandant of the Third Naval District, who eloquently spoke of the accomplishments of the lecturer for the evening, Lieutenant Commander John H. Ebersole, U. S. Navy, and of the importance of the submarine and the medical problems connected with its operation.

Everyone was impressed with the importance of details when it comes to living in a submarine and particularly in a nuclear powered submarine for a period of sixty days under water as Commander Ebersole and the crew of the USS *Seawolf* did. Paint, freon gas, radium dial wrist watches, carbon dioxide, oxygen supply, these and other problems had to be solved by those in command before this sixty day trip was made possible. As Doctor Ebersole pointed out, these problems were not solved in a short time; they have been studied and the solutions arrived at over a period of years. But no such trip would have been possible had not many of the problems been solved and proper preparation made for them.

He pointed out that smoking previously had been a cause of carbon monoxide build-up but by proper monitoring the limit of tolerance had not been exceeded. It has been possible to permit an extension of time to the smokers for their enjoyment of tobacco.

Dr. Ebersole, a native of Illinois, a graduate of the University of Indiana Medical School, experienced in nuclear medicine and submarine medicine, was the recipient of the 1958 Gorgas Award of the Association of Military Surgeons.

DR. KIMBALL HEADS MEDICAL STAFF

Dr. Francis N. Kimball, of New York City, has been appointed as General Director of Medical Activities for the Eastern Air Lines System.

A pursuit pilot and aviation instructor in World War I, Dr. Kimball was one of the pioneers in the field of aviation medicine. He is a colonel in the U. S. Air Force Reserve, Retired.

In 1917, while an undergraduate at the University of Michigan, Dr. Kimball joined

Fabian Bachrach

FRANCIS M. KIMBALL, M.D.

the Aviation Section of the Army Signal Corps, took his flight training at Love Field, Dallas, Texas, and later served there as a pilot-instructor. He returned to the University of Michigan after the war and completed his medical work in 1923. He studied in his chosen specialty of urology and continued his interest and training in aviation medicine and was qualified as a flight surgeon in 1925.

Dr. Kimball is a Life Fellow of the New York Academy of Medicine and the American College of Surgeons; a member of the American Urological Association; a past-president and currently Treasurer of the New York Chapter of the Association of Military Surgeons of the U. S.; a member of the American Medical Association and the New York State Medical Society.

PROPOSED AMENDMENT TO THE BY-LAWS OF THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES

Action will be taken by the members of the Association of Military Surgeons at the 66th Annual Convention, November 9-11, 1959 on the following proposed amendment to Section 5 of Article XII of the By-laws:

"In order to provide sufficient capital for meeting contingent or expected payments from the Retirement Fund, the Executive Council (a) may at its discretion pay to the Treasurer of the Retirement Fund from the funds of the Association such amounts from time to time as the Council deems suitable, and (b) may at its discretion from time to time change the percentage of the current income of the Association to be set aside for the Retirement Fund, provided said percentage shall not be less than four percent (4%) nor in excess of eight percent (8%)."

SECTION 5, ARTICLE XII OF THE BY-LAWS PRESENTLY READS:

"The Retirement Fund shall be constituted by setting aside and paying to the Treasurer of the Retirement Fund Trustees four percent (4%) of the current income of the Association, including all of any income or funds set aside and specified to be for said fund, including accretions on the capital belonging to said fund but excluding accretions on the capital of the Association which are not a part of said Fund."

NEW BOOKS

Members may purchase books through the Association.

Modern Dermatologic Therapy, Thomas H. Sternberg, M.D. and Victor D. Newcomer, M.D., Blakiston Division, McGraw-Hill Book Co., Inc., New York, N.Y. Price $10.00.

Headache: Diagnosis & Treatment, edited by Arnold P. Friedman, M.D., and H. Houston Merritt, M.D., F. A. Davis Co., Philadelphia, Pa. Price $8.00.

501 Questions and Answers in Anatomy, Stanley D. Miroyiannis, Ph.D., F.A.A.A.S., F.I.A.S., Vantage Press, Inc., New York, N.Y. Price $5.00.

Guide for Army National Guardsmen, James B. Deerin, The Stackpole Co., Harrisburg, Pa., Price $3.50.

The Degenerative Back and its Differential Diagnosis, P. R. M. J. Hanraets, M.D., Elsevier Press, Inc., Princeton, N.J. Price $19.95.

A Textbook of Medicine, 10th Edition. Edited by Russell L. Cecil, M.D., Sc.D., and Robert F. Loeb, M.D., Sc.D., D. Hon Causa, LL.D., W. B. Saunders Co., Philadelphia, Pa. Price $16.50. (In set of two volumes $20.50)

A Manual of Anaesthetic Techniques, William J. Pryor, M.B., Ch.B. (N.Z.), F.F.A.R.C.S. (Eng.), D.A. (Eng.), F.F.A.R.A.C.S., The Williams & Wilkins Co., Baltimore, Md. Price $7.00.

Orthopaedics Principles and Their Application, Samuel L. Turek, M.D., J. B. Lippincott Co., Philadelphia, Pa. Price $22.50.

Hypertension, The First Hahnemann Symposium on Hypertensive Disease, edited by John Moyer, W. B. Saunders Co., Philadelphia, Pa. Price $14.00.

Psychiatry in Medical Practice, editor W. Lindesay Neustatter, M.C., B.Sc. (Psy.), M.R.C.P., John de Graff, Inc., New York, N.Y. Price $8.00.

Strong and Elwyn's Human Neuroanatomy, Raymond C. Truex, The Williams & Wilkins Co., Baltimore, Md. Price $10.00.

Patient Care and Special Procedures in X-Ray Technology, Carol Hocking Vennes, R.N., B.S., and John C. Watson, R.T., C. V. Mosby Co., St. Louis, Mo. Price $5.75.

The Officer's Guide, The Stackpole Company, Harrisburg, Pa. Price $6.00.

Progress in Psychotherapy, Vol. IV, Social Psychotherapy, edited by Jules H. Masserman, M.D., and J. L. Moreno, M.D., Grune & Stratton, Inc., New York, New York. Price $8.75.

Biological Psychiatry, edited by Jules H. Masserman, M.D., Grune & Stratton, Inc., New York, New York. Price $9.75.

Surgery of the Colon, E. S. R. Hughes, M.D., M.S. (Melb.), F.R.C.S. (Eng.), F.R.A.C.S., The Williams & Wilkins Co., Baltimore, Md. Price $12.50.

Aphasia Handbook for Adults and Children, Personnel of Lakewood Speech Clinic and VA Aphasia Clinics, Edwards Brothers, Publishers, Ann Arbor, Michigan. Price $3.25.

Clinical Orthopaedics #13: The Hand—Part 1, Anthony F. DePalma, Editor-in-Chief, J. B. Lippincott Co., Philadelphia, Pa. Price $7.50.

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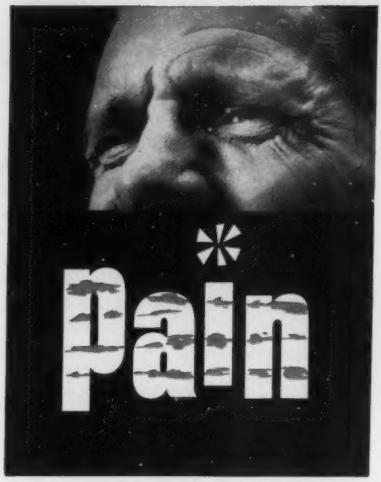

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BOOK REVIEWS

TUBERCULOSIS: PREVENTION AND CONTROL. By H. W. Hetherington, M.D. (Henry Phipps Institute); and Fannie W. Eshleman, R.N., B.S. 404 pp. G. P. Putnam's Sons, New York. Price $6.50.

This revised text presents an up-to-date review of modern methods used in this field. It is a complete review and is particularly suitable as a text for schools in public health nursing, as a reference in Tuberculosis hospitals, and for various tuberculosis workers.

Doctor Hetherington and Miss Eshleman have written a practical text through which students can obtain essential information for a general understanding of tuberculosis problems. The authors have abundant experience in the diagnosis and care of tuberculosis through the years of sanitarium and hospital service, dispensary practice, and care of tuberculosis in the home. They are well qualified to present the subject of tuberculosis in all its aspects.

BRIG. GEN. CARL W. TEMPEL, MC, USA

PRATIQUE DU LABORATOIRE. 2nd Edition (In French) By Ch. Jaulmes, A. Jude, J. Querangal Des Essarts, all of the Medical Service of the Army. 872 pages. Masson et Cie, Paris. Price Fr. 6,500.

For those in the field of clinical pathology who can read French this book should prove interesting and instructive not only for the information contained therein but for the opportunity to compare French procedures with those in use in the United States. The authors are of the French Army Medical Service and presumably the methods described are those in use in that service.

The field covered is quite broad as is evident from the subject matter of the seven parts into which the book is divided. The first part describes general laboratory technics such as sterilization, staining procedures, preparation of culture media, testing of antibiotic sensitivity and the use of experimental animals. The second part covers the field of diagnostic bacteriology including chapters on serologic methods, skin tests and virus and rickettsial diseases. The third part is devoted to biochemistry and the fourth part to the bacteriological examination of water, dairy products and canned foods. The fifth part covers hematology and the serological diagnosis of syphilis, gonorrhea, tuberculosis, echinococcosis, malaria and infectious mononucleosis. A complement fixation technic is described for the serological diagnosis of gonorrhea using an antigen prepared from cultures of the gonococcus. Satisfactory results depend largely upon the use of a properly prepared antigen. The test tuberculosis is a precipitin reaction using serum and a solution of resorcin. A serologic test for malaria is described which is a flocculation test using a solution of melanin prepared from the choroid coat of beef eyes. Parasitology and entomology are covered in the sixth part and histopathological technics in the seventh part.

The description of procedures is easy to follow and the technics are practical so that the book is valuable as a "bench" book for daily use. There are fifty black and white illustrations and the one color plate portrays the various blood cells.

COL. HUGH GILMORE, JR., USA, Ret.

REHABILITATION MEDICINE. Howard A. Rusk, M.D., and 36 collaborators. 572 pages, illustrated. The C. V. Mosby Company, St. Louis. 1958. Price $12.00.

Doctor Rusk and his group have written a book that can well become the standard textbook on Rehabilitation Medicine. In the preface he states that just as rehabilitation services for the individual patient require the team approach, the book is the product of team work. It discusses the principles of rehabilitation medicine and then the application of these principles. All chapters are excellent but one that stands out is the chapter on the principles of rehabilitation nursing.

The illustrative examples showing the value of coordinated approach and the use of all the disciplines are excellent. It is unfortunate that on page 286 "one hitch" in the policy of the Federal government on employment of the physically handicapped was highlighted as a case report. The profuse number of graphs and charts are very useful for guide posts. The bibliography is extensive and the index is good.

The book shows how a general practitioner may acquire the know-how to become well qualified in rehabilitation.

JOHN A. DATTOLI, M.D., M.P.H.

NEUROLOGICAL BASIS OF BEHAVIOUR. Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., and Cecilia M. O'Connor, B.Sc. 400 pages, illustrated. Little, Brown & Co., Boston. Price $9.00.

This book is a report on a symposium held in London shortly before the international congresses

in neurological sciences in Brussels in the summer of 1957. It is made up of twenty papers, more or less related. The symposium was held to commemorate the birth of Sherrington, one hundred years before.

The Chairman in his introductory remarks states that "from the utilitarian point of view, it may be pointed out that the future of psychiatry seems likely to be closely linked with the development of this new field of science which attempts to place psychology on a basis of neurophysiology. The social and medical problems of psychiatry are urgent in all countries. . . . The connection between the work discussed at this symposium and practical psychiatry will probably seem remote. It is likely, however, that the slow, painful and painstaking accumulation of data in the field of our interest will one day form the basis of an understanding of normal and abnormal behavior and afford a sound footing for the treatment of psychoses."

These chapters are all followed by a list of references and discussion by various members of the symposium. Perhaps the best summary of the entire volume is given by Dr. H. Klüver of the Division of Biological Sciences, University of Chicago, where, in the section on "General Discussion," he states:

"In considering the material presented at the conference, it has ranged from the microphysiology of neurones to phenomena of behavior and psychology. When it comes to psychology I have at times expressed the opinion that it is a field which unfortunately has a great deal in common with virology in that its subject-matter is invisible or practically invisible. As regards the various techniques employed in studying the neurological substratum of behavior, they have been representative of a wide range of methods including anatomical, histological, neurophysiological, electrophysiological, pharmacological, biochemical, clinical and strictly behavioral methods. The great diversity of material and methods makes it extremely difficult for a single investigator, at least for me, to arrive at a synthesis of the results of a symposium such as this one."

Certainly, in reading over the various chapters, one is confused by the numerous angles to this question, and the reader is impressed by the possible future investigations that may arise. There is a present trend towards emphasizing the organic basis of behavior, but within the last few months, there has been a move away from the purely organic to a saner, middle-of-the-road approach toward a proper balance between the psyche and the soma. Certainly this symposium gives plenty to think about.

CDR. JAMES L. MCCARTNEY (MC) USNR, RET.

THE MANAGEMENT OF EMERGENCIES IN THORACIC SURGERY. By John Borrie, M.B.E., Ch.M., F.R.C.S., Thoracic Surgeon, Dunedin Hospital, New Zealand. 340 pages, illustrated. Appleton-Century-Crofts, Inc., New York. Price $10.00.

The author has utilized his wide experience in the field of thoracic surgery to present those thoracic lesions which are essentially surgical emergencies. Their pathological nature, clinical features and management are discussed, as well as the recognition and management of the complications arising from the everyday procedures in thoracic surgery.

The twenty-four chapters are divided into eight sections. A preliminary discussion of general thoracic procedures is followed by a discussion of the emergencies arising from chest wall injuries. Those emergencies involving the pleura, the lungs and the esophagus are presented, followed by sections dealing with mediastinal, diaphragmatic and cardiac emergencies.

The printing and illustrations are clear and the text is concise and terse. The text is recommended to everyone dealing with thoracic surgical problems.

CAPT. R. N. SHELLEY, MC, USNR

EMOTIONAL PROBLEMS OF CHILDHOOD. Edited by Samuel Liebman. Clinical Assistant Professor of Psychiatry, University of Illinois, College of Medicine. 10 contributors. J. B. Lippincott Co., Philadelphia and Montreal. Price $5.00.

Information abounds in this book about behavior problems from conception through adolescence. Nine chapters, written by psychiatrists, pediatricians and one speech therapist, comprise the collection, which is directed toward the ordinary medical practitioner. The various subjects are treated in as clear language and practical a manner as could be desired.

Confronted with such consistently high quality, it seems unfair to single out any contributor for special mention. But since it probably only reflects my personal interests, I want to mention Dr. Cramer's "Management of Behavior Problems in Adolescents" as a fine exposition of what can be done through direct guidance of one parent without any therapeutic contact with the actual patient whatsoever. On the other hand, Dr. Falstein shows how much can be accomplished (with infinite patience and some unusual methods) in directly treating the adolescent.

Drs. Richmond and Lipton, in their "Psychological Development of Infants," have much of value to say about the growth of feeding, sleep and motility patterns. Their article is so soundly grounded that it might well be recommended to all expectant parents, if for no other reason than the one the following quote will make clear: "In an era in which there is much oversophistication about psychological processes in infant care, it is important that we emphasize the significance of physiologic comfort." Needless to say, there is no oversophistication in the present book.

ROBERT P. ODENWALD, M.D., F.A.P.A.

OPERATIVE SURGERY. Progress Volume 1958 and General Index. By Charles Rob, M.C., M. Chir., F.R.C.S., London; and Rodney Smith, M.S., F.R.C.S., London. 185 pages, illustrated. F. A. Davis Company, Philadelphia.

When *Operative Surgery* was originally planned it was intended that eight volumes of text should be completed by a General Index linking the whole work. This intention has been carried out but since the object of the work is to present a complete picture of contemporary operative surgery, it has been decided to incorporate with the Index a progress volume which takes account of fresh procedures which have been developed since the main volumes appeared and it is published now to avoid a break in continuity.

Eight entirely new articles appear in the present volume and repetition of procedures is avoided, where necessary by cross-reference to the appropriate volume, part number and page in the main work.

NURSE-PATIENT RELATIONSHIPS IN PSYCHIATRY. 2nd Ed. Helena Willis Render, R.N., B.S., and M. Olga Weiss, R.N., M.Litt. 319 pages. McGraw-Hill Book Company, Inc., New York, Toronto, London. 1959. Price $5.95.

In this book, nurse-patient relationships in psychiatry are approached from the beginning nurse's point of view. A wonderfully warm and human approach is emphasized throughout, although at times it seems much too directive. Details are complete and every aspect of behavior is presented.

Much that is included, however, is requiring less attention in military hospitals today as they move toward fewer restrictive policies, little somaic therapy, and greater awareness of the total milieu in therapy.

This text would be helpful in teaching auxiliary personnel attitudes, awareness of needs of patients, and analysis of problems relating to patient-care. It should promote a thoughtful evaluation of behavior and a better understanding of it on a practical basis.

The authors' own statements serve, perhaps, as a keynote to their philosophy of patient-care and can well be a constant reminder to all nurses:

"The patient's individuality is a precious and prized possession. You have no right to try to change him more to your liking, to do for him only what is necessary because he falls short of your opinion of a 'good' patient, or to attempt to fit him into a preconceived rigid scheme. It is your responsibilty to develop within yourself attitudes that respect the patient as a person."

Bibliographies at end of each chapter are extensive, the contents of the appendices (including the analysis of Flaubert's "Madame Bovary)," are of interest, and the chapter on visual aids is helpful.

MAJOR SELMA BRAWNER, ANC

DISEASES OF CHILDREN IN THE SUBTROPICS AND TROPICS. By H. C. Trowell, O.B.E., M.D., F.R.C.P., Senior Specialist Physician, University College of East Africa, Uganda; and D. B. Jelliffe, M.D., M.R.C.P., Visiting Professor of Tropical Medicine, Tulane University. 919 pages, illustrated. The Williams & Wilkins Co., Baltimore, exclusive U.S. agents. Price $18.50.

Interest in tropical diseases among the pediatricians of this country has leaped upward in the past few years. More and more children are being recognized to have conditions formerly considered to be exotic. The more rapid interchange of peoples from tropic to temperate zones with improved transportation, the immigration of whole populations as from Puerto Rico, and the exposures of our overseas military dependents are a few of the factors at work. Recognition of this trend has led the American Academy of Pediatrics to present courses on tropical diseases for its members. The appearance of this book is most timely and welcome. Up to the moment of its publication, there was no text which attempted to deal with the particular problems of infancy and childhood in the tropics.

More than 70 authorities from all over the globe contributed to the book from their first-hand experiences with indigenous diseases. Additionally, there are chapters on preventive medicine, growth and development, infant feeding, and other conventional subjects of pediatrics, placing them in proper frame of reference. The principles of therapy appear to remain as valid in the tropics as in the temperate zone, but the practical applications must take cognizance of parental ignorance and superstition, tribal customs, poor sanitation, and sheer lack of means. This is brought out very well by the authors who recognize that their audience will, for the most part, have had little direct contact with these problems. The book is, in this sense, a "primer"; yet it is detailed enough to be of value to graduate study.

Excellent and complete discussions of the disturbances of nutrition, the diarrheal diseases, the diseases of liver, the disorders of blood, the bacterial, protozoal, and helminthic infections are given. Other types of illness varying little from temperature zone counterparts are treated briefly. The smooth readability and clarity of the text is a tribute to the editors.

Printed on high quality paper, it is graced with a moderate number of references and a complete index. There are many clear photographs including some hair-raising cases of noma and tertiary yaws.

"Diseases of Children in the Subtropics and Tropics" is a completely unique book which belongs in every Medical Library. It should be of great interest to any physician caring for children, but particularly to those who, for geographic or other reasons, see appreciable numbers of foreign-born from tropical lands.

MAJOR EDWARD J. TOMSOVIC, MC, USA

ESSENTIALS OF CLINICAL NEUROANATOMY AND NEUROPHYSIOLOGY. By John T. Manter, Ph.D., M.D., Associate Professor of Psychiatry and Neurology, Medical College of Georgia. 137 pages, illustrated. F. A. Davis Co., Philadelphia. Price $3.00.

This is a new book, and its brevity is at the same time its strength and its weakness. But if the student or the practicing physician uses it as a *working résumé* of the essentials of neuroanatomy and neurophysiology he will understand the author's purpose and profit by its use.

The text is terse and necessarily didactic, and no single topic is enlarged upon because of the limited space that has been used for such a very large subject. The illustrations, many of which are diagrammatic, are original, simplified, and readily useful as the text is read. Chapter 14, "Lesions of the Brain Stem," certainly displays the author's ability to present complex material in a brief, practical, understandable manner.

There are a few examples of discussions relating to strictly clinical topics, such as that of the few statements concerning prefrontal leucotomy, where the topic is so short-changed by the brief text that perhaps it might best have been omitted altogether. All in all, the book is a valuable tool for ready reference when problems arise in the correlation of the anatomy and physiology of the nervous system.

JOHN MARTIN, M.D.

CARDIAC ARREST AND RESUSCITATION. By Hugh E. Stephenson, Jr., M.D., Professor and Chairman, Department of Surgery, University of Missouri School of Medicine with six contributors. 371 pages. The C. V. Mosby Company, St. Louis. 1958. Price $12.00.

The subject of cardiac arrest has been one of growing importance particularly in the last several years as more extensive and radical surgery has been exhibited on more and more patients. These surgical procedures have been made possible by modern anesthesiology utilizing intricate methods and a complex polypharmacy. There is every reason to believe future years will witness continued expansion.

Among the undesired side effects has been the problem of cardiac arrest which occurs about once in every twelve hundred or so operations and totals 7,500 to 9,000 annually in the United States alone.

The author established a Cardiac Arrest Registry and it is upon the collated evidence obtained thereby from reports from all over the world, plus the author's own studies and experiences, that this book is based.

In a word it is a classic with all phases of cardiac arrest reviewed. The history of cardiac arrest, its incidence, etiotic factors, pathogenesis, and diagnosis are clearly discussed. Resuscitative management is then discussed in a highly instructive manner.

The latter chapter is excellently illustrated and emphasizes the necessity for all physicians to learn the essence of speed in recognition and institution of immediate manual massage (within 4 minutes of asystole or ventricular fibrillation). The indications and technic of electric shock to the myocardium are clearly presented. Although very positive in his ideas of what, when and how to perform resuscitative efforts the author gives the reader a fair review of oppositional views.

There are very informative chapters on pitfalls, precautions and complications of cardiac resuscitation, sequelae including neurologic ones, prevention, and particularly a most interesting one on Medico-Legal Aspects that offers sound protection to those who have the temerity to cope aggressively with this life or death situation.

There is one grievous error. On page 309 the intravenous dosage of Lanatoside C is given as 8.0 mg rather than 0.8 mg. Such a dose would be 100% effective in causing an irreversible cardiac arrest and the publishers should send out an *"errata"* notice.

Finally, of the 378 pages there is a bibliography of 53 pages. This is in addition to other reference lists, so that almost 20% of the book is devoted to references from almost the beginning of civilization to the present and from almost all the countries in the world. Doubtless, this delights the academician but it adds to the price of the book, and limits the extensive distribution it should have. Truly this matter of carrying a bibliography to the ultimate is an example of the tail wagging the dog.

This book is a modern classic and a more practical edition ought to be made available for wide distribution throughout operating rooms, emergency and first aid stations.

It should be required reading and rereading for surgeons of all disciplines, anesthesiologists, internists, cardiologists, and all military medical officers. They should acquire experience in cardiac resuscitation.

Dr. Stephenson merits the thanks of the profession for the zealous and conscientious attention and the time he has devoted to the Registry and for expounding so lucidly the principles of cardiac resuscitation he has learned. Thousands of lives will be saved in the future as more and more physicians become schooled in this knowledge.

CAPT. JULIAN LOVE, USN, Ret.

REMINISCENCES AND ADVENTURES IN CIRCULATION RESEARCH. By Carl J. Wiggers, M.D., Western Reserve University, Cleveland. 404 pages. Grune & Stratton, Inc., New York and London. Price $9.75.

One of the outstanding research physiologists of the twentieth century relates in this monograph his autobiography and gives an account of his diversified cardiovascular researches. His writing style

easily holds the readers' interest as he discusses the activities and problems associated with an academic career of teaching and investigation. His personal relationship with many well known teachers and scientists, and former students who have since gained renown for themselves, is presented so as to give more intimate detail of their personalities than is usually described. The author also mentions several methods of presenting material in the classroom and laboratory that should serve as good advice to young and inexperienced individuals engaged in this type of work.

There are two parts, called Book I and Book II; Book I, Reminiscences and Book II, Adventures in Circulation Research. The second book discusses the various cardiovascular researches in which the author and his associates have been engaged in the past 50 years. Each chapter gives a complete account in specific areas of research and is, therefore, not arranged in the chronological order of pursuit.

This book should have an appeal to a wide range of physicians in addition to teachers, physiologists and cardiologists.

COL. D. O. LYNN, MC, USA

ATLAS OF TECHNICS IN SURGERY. By John L. Madden, M.D., F.A.C.S., Associate Clinical Professor of Surgery, New York Medical College, with 62 contributing authors. 648 pages. Appleton-Century-Crofts, Inc., New York. Price $30.

The one and only appropriate way for a surgeon-in-training to acquire a sound surgical technic is at the operating table under the guidance of an eminently qualified and experienced surgeon who is actively participating in the operative procedure from beginning to end. Any other arrangement for learning or teaching the technical aspect of surgery should be considered hazardous from a malpractice point of view. The basic prerequisites for grasping what is thus taught during an operation are an extensive knowledge and a clear understanding of physiology, pathology, and topographic anatomy. Dr. Madden's Atlas will be of inestimable value to all who follow these suggestions and who have absorbed the fundamentals.

In 100 chapters nearly 2,000 drawings of surgical technics used by the author are described by him step by step and are critically discussed by 60 renowned authorities with particular experience in one or another special field of general surgery. Among the many highlights of this fascinating book, to mention only a few, are the two opening chapters on pre- and postoperative care with consideration of fluid and electrolyte balance, and on anesthesia, written by Drs. Henry T. Randall and George A. Keating respectively, and the two chapters on esophagectomy technics, with illuminating commentaries by Dr. John H. Garlock; this discussant stresses, for example, the vital importance of gentle handling of the stomach throughout the operation, since local trauma may produce thrombosis and localized necrosis with perforation in the early postoperative period. Another complication, usually fatal, is postoperative leakage, almost always occurring at the beginning of the greater gastric curvature which is the most precarious area from the standpoint of adequate blood supply. By removing this potentially dangerous portion of the curvature a leakage can be prevented.

The Atlas contains a multitude of technical hints and procedural variations which to know, select and use properly may very well spell the difference between life and death to the patient. The author and his collaborators have made an outstanding contribution to the advance of the art of surgery by assembling this volume. It enables the reader to evaluate the proposed merits of a particular operative technic. The drawings are distinct and instructive and devoid of unnecessary details or denotations. Their clarity is enhanced by the legends which are precise and intelligible. The layout and printing of text and illustrations are exemplary. A bibliography is appended to each subject, and additional references follow the last chapter.

This is a remarkable work indeed. It should immeasurably benefit the patient if, prior to the performance of any operation, every practicing and teaching general surgeon would avail himself of the book's vast potentialities. He should become familiar with the experience gathered by an array of skillful surgeons, be this for the purpose of demonstrating only the most adequate, practicable and confirmed technical methods or for evaluating and adjusting his personal technic. Furthermore, all those in the formative phase of surgical training will be well assisted in their endeavor through continual study of this book. It can be considered a key instrument for the solution of technical problems in clinical surgery.

It appears imperative to have this standard work on every surgical service and office desk for handy reference. There is no doubt that Madden's Atlas will be indispensable to teachers and students of operative technics.

ERNEST G. ABRAHAM, M.D.